COLUMBIA LIBRARIES OFFSITE
HEALTH SCIENCES RESTRICTED
HR02157810

SERIAL v. 27

P 1915

Columbia University
in the City of New York
College of Physicians and Surgeons

Reference Library

Digitized by the Internet Archive
in 2014

https://archive.org/details/pediatrics2719unse

PEDIATRICS

A MONTHLY JOURNAL
DEVOTED TO THE
STUDY OF

Disease in Infants and Children

WILLIAM EDWARD FITCH, M.D.
EDITOR IN CHIEF

J. WALLACE BEVERIDGE. M.D.
Assistant Editor

ASSOCIATE EDITORS

William C. Hollopeter, A.M., M.D.	Philadelphia
James W. Van Derslice, A.B., M.D.	Chicago
William A. Edwards, A.M., M.D.	Los Angeles
James K. Young, M.D.	Philadelphia
Gilbert L. Baily, M.D.	Chicago
St. George A. Grinnan, M.D.	Richmond, Va.
Alfred C. Wallin, M.D.	New York

Volume XXVII

January 1 to December 31, 1915

PUBLISHED BY
PEDIATRICS
25 East 60th Street
NEW YORK CITY

COLLABORATORS

LeGrand Kerr, M.D.,	Brooklyn
Louis Fisher, M.D.,	New York
Herman B. Sheffield, M.D.,	New York
Elias H. Bartley, B.S., M.D.,	Chicago
Alfred Cleveland Cotton, A.M., M.D.,	Chicago
William J. Butler, A.M., M.D.,	Chicago
E. P. Davis, C.M., M.D.,	Philadelphia
J. P. Crozier Griffith, M.D.,	Philadelphia
Maynard Ladd, M.D.,	Boston
John Ruhrah, M.D.,	Baltimore
J. H. Mason Knox, Jr., A.B., M.D.,	Baltimore
Samuel A. Visanska, Ph.G., M.D.,	Kentucky
C. B. Wright, A.B., M.D.,	Minneapolis, Minn.
Henry Enos Tulley, A.B., M.D.	Atlanta
Walter C. Ramsey, M.D.,	St. Paul
Henry L. Coit, M.D.,	Newark, N. J.
D. J. M. Miller, M.D.,	Atlantic City
W. W. Butterworth, M.D.,	New Orleans
T. J. Elterich, M.D.,	Pittsburgh
Charles Douglass, M.D.,	Detroit
H. M. McClanahan, M.D.,	Omaha
A. D. Wilkinson, M.D.,	Lincoln
George M. Wells, M.D.,	Portland
J. Ross Snyder, M.D.,	Birmingham
John Zahorsky, A.B., M.D.,	St. Louis
Edmund Cautley, M.D., F.R.C.P.,	London
J. Boyd Barrett, M.D.,	Dublin
R. Barclay Ness, M.A., M.D.,	Glasgow
S. P. Baumann, M.D., M.R.C.P.,	Johannesburg

VOLUME XXVII, 1911

CONTRIBUTORS

Williams, Tom A., M.D., Edin., Washington, D. C.
Lederman, I., M.D., Louisville, Ky.
Robertson, John, M.D., Birmingham, England.
Chalmers, A. K., M.D., Glasgow, Scotland.
Pritchard, Eric, M.A.,M.D., London.
Gray, Thomas N., M.D., East Orange, N. J.
Epstein, J., M.D., New York City.
Le Breton, Prescott, M.D., Buffalo, New York.
Hollopeter, W. C., A.M., M.D., Philadelphia.
Knox, J. H. M., Jr., Baltimore.
Forsyth, David, M.D., D.Sc., F.R.C.P., London.
Coleman, W.G., A.B., M.D., Louisville, Ky.
Stoeltzner, Prof. Dr., Wilhelm, Germany.
Mapes, Charles C., M.D., Louisville, Ky.
Kerley, Charles Gilmore, M.D., New York.
Richardson, John B. Jr., M.D. Louisville, Ky.
Heflin, E. Lee, M.D., Louisville, Ky.
Cullen, J. P., M.D., London, England.
Potter, Philip S., A.B., M.D., Syracuse, N. Y.
Laben, Geo. J., M.D., Papineau, Ill.
Grant, H. Horace, A.M., M.D., Louisville, Ky.
Kinchloe, John E., M.D., Hardinsburg, Ky.
Mitchell, Edward Clay, M.D., Memphis, Tenn.
Clopton, Malvern B., M.D., St. Louis.
Potter, Philip Sheridan, A.B., M.D., Syracuse, New York.
Beveridge, J. Wallace, M.D., New York City.
Wilson, Dunning S., M.D., Louisville, Ky.
Carpenter, E. W., M.D., Greenville, S. C.
Visanska, Samuel A., M.D., Atlanta, Ga.
Cautley, Edmund, M.D., F.R.C.P., London.
Bizot, A, R., M.D., Louisville, Ky.
Servoss, George L., M.D., Reno, Nevada.
McMurtrie, Douglas C., New York City.
Achard, H. J., M.D., Asheville, N. C.
Tubby, A. H., M.S.F.R.C.S., London.
Tuley, Henry Enos, M.D., Louisville, Ky.
Carroll, Harry B., A.M., M.D., Cincinnati.
Peabody, James Royden, M.D., Louisville, Ky.
Thursfield, Hugh, M.D., London, England.
Koch, Ernest H., M.D., Louisville, Ky.
Hanna, J. J., Quanah, Texas.
Fitch, W. E., M.D., New York City.
Johnson, C. K., M.D., Burlington, Vt.
Hall, Gaylord C., M.D., Louisville, Ky.
Hall, Gaylord C., M.D., Louisville, Ky.
Ellingwood, Finley, M.D., Evanston, Ill.
Bizot, A. R., M.D., Louisville, Ky.
Zimmerman, B. F., M.D., Louisville, Ky.
Minton, Henry B., M.D., Brooklyn, N. Y.
Pallister, Stanley W., M.D.. Brooklyn, New York.

AUTHORS OF DISCUSSIONS BEFORE PEDIATRIC SOCIETIES

Krunbhaar, Dr. Edward B., Philadelphia.
Metcalf, Dr. Carleton R., Concord, N. H.
Schloss, Oscar M., New York.
Peterson, Dr. Edward, New York.
Fishberg. Dr. Maurice, New York.
Park, Dr. William H., New York.

VOL. XXVII, 1915

Cole, Dr. Rufus, I., N. Y.
Reuben, Dr. Mark S., New York.
Welt-Kakels, Dr. Sara, New York.
LeFetra, L. E., Dr., New York.
Smith, Charles Hendee, M.D., New York.
Mason, Dr. Howard H., N. Y.
Northrup, Dr. William P., New York.
Hoag, Dr. Ward Bryant, New York.
Hirsch, Dr. I. S., New York.
Truesdell, Dr. Edward D., New York.
Law, Dr. Frederick M., New York.
LeWald, Dr. Leon Theodore, New York.
Hymanson, Dr. Abraham, New York.
Clark, Dr. L. Pierce, New York.
Strause, Dr. Israel, New York.
Hess, Dr. Alfred F., N. Y.
Heiman, Dr. Henry, New York.
Soresi, Dr. Angelo, L., N.Y.
Vander Bogart, Dr. Frank, Schenectady, N. Y.
Morse, Dr. John Lovett, Boston.
Shaw, Dr. Heury L.K., Albany, New York.
Southworth, Dr. Thomas S., New York.
Sinclaire, Dr. John F., Philadelphia.
Clark, Dr. T. Wood, Utica.
Scott, Dr. George Dow, New York.
Rabinoff, Dr. Sophia, R.. New York.
Cecil, Dr. Russell L., N. Y.
Noguchi, Dr. Hideyo, N. Y.
Steels, Dr. Albert, E., Boston.
Acker, Dr. George N., Washington, D. C.
Southworth, Sr. Thomas S., New York.
Heiman, Dr. Henry, New York City.
Haynes, Dr. Royal S., New York City.
Talbot, Dr. Fritz B., Boston, Mass.
Saunders, Dr. E. W., St. Louis, Mo.
White, Dr. T. Wistar, St. Louis.
Hoobler, Dr. Raymond, Detroit, Mich.
Gernstenberger, Dr. H. J. Cleveland, Ohio.
Haskins, H. D., M.D., Cleveland, O.
McGregor, Dr. H. H., Cleveland, O.
Ruh, Dr. H. O., Cleveland, O.
Ladd, Dr. Maynard, Boston, Mass.
Tileston, Dr. Wilder, New Haven, Conn.
Comfort, Dr. Charles W., New Haven, Conn.
Peabody, James Royden, M.D., Louisville, Ky.
Koch, Ernest H., M.D., Louisville, Ky.
Holt, L. Emmett, M.D., New York City.
Courtney, Angelia, New York City.
Fales, Helen, M.D.. New York City.
Freeman, Dr. Rowland G., New York City.
Chapin, Dr. Henry Dwight, M.D., New York City.
Dunn, Charles Hunter, M.D., Boston.
Porter, Dr. Langley, San Francisco.

EDITORIALS

The Value of Internal Remedies in Pediatric Practice 1
Precocious Sexual Impulses ... 3
The Mechanism of Immunization 4
Constipation in Infants 45
The Worm Turns 46
The Control of Whooping Cough 47
Special Internal Secretion Number 49
Litten's Sign as an Aid in the Diagnosis of Thoracic Disease 103
The Medical Aspects of the Second Dentition 104
The Infant's Ability to Digest Starch 106
Pubescence, Adolescence and Environment 151
The Physician's Duty in Direct the Diet of Breast and Bottle Fed Infants 153
Safe Milk for Baby 156
Chairs for Children 157
Vitamines in Milk 203
Prognosis and Treatment of Acquired Valvular and Acquired Pericardial Murmurs 205
Some Physiological Principles Concerned in the Nutrition of Infants 207
Posture and Digestion in Infancy 209
Intestinal Affections of Children in Hot Weather 251
Summer Care of Frail Children 254

VOL. XXVII, 1915

Disturbances of Nutrition in Childhood 255
Outdoor excercise and Motor Training for the Youngster .. 256
Clothes and Other Things 309
Relief in Nerve Palsies 311
Pyloric Stenosis 312
Chorea 313
Growth in Height and Weight of Children 361
Mothercraft and Its Influence on Infant Mortality............ 362
The Influence of the Midwife on Infant Mortality 364
Cancer in Children 409
Anaphylaxis 412
Disturbances with Carbohydrate Over-Feeding 413
Meningitis in Infancy Dependent on Bacillus-Coli Communis 415
Inborn Anomalies of Digestion . 463
The Toxaemias of the Newly Born 464
Infantile Scurvy 466
The Exudative Diathesis 467
Care of the Mouth 517
Types of Nervous Disease in Children 518
Constipation in Infants 518
The Management of Infants at the Breast 520
Christmas Greetings 575
The Close of the Twenty-Seventh Volume 576
Chorea of Rheumatic Origin ... 576
The Dog as a Carrier of Disease 578

ORIGINAL ARTICLES

A Discussion of Some Factors of Disorders of Internal Secretion in Children, by Tom A. Williams, M.D., C.M., Edin., Washington, D. C............ 8
Esophageal Stricture: Report of a Case, by I. Lederman, M.D., Louisville, Ky. 10
The Special Responsibilities of Sanitary Authorities in Regard to Infant Welfare, by John Robertson, M.D., Birmingham, Eng. 13
Ante-Natal Hygiene and Its Relation to Still and Premature Births and Mortality in the First Months of Life, by A. K. Chalmers, M.D., Glasgow, Scotland 18
The Scope and Functions of Schools for Mothers, by Eric Prichard, M.A., M.D., London. 50
The Reduction of Infant Mortality: How Can it Best Be Accomplished? by Thomas N. Gray, M.D., East Orange, N. J. 60
A Touch of Pneumonia, An Aborted Pneumonia, and the Mis-treatment of Pneumonia in Children,by J. Epstein, M.D., New York City. 70
Congenital Lateral Curvature of the Spine, by Prescott Le Breton, M.D., Buffalo, New York. 73
Syphilis in Children, by W. C. Hollopeter, A. M., M.D., Philadelphia. 107
The Care of Institutional Infants Outside of Institutions, by J. H. M. Knox, Jr., Baltimore. . 114
The Health of Children Under School Age, by David Forsyth, M.D., D.Sc., F.R.C.P., London. 120
A Typical Erb's Paralysis: Report of a Case, by W. H. Coleman, A.B., M.D., Louisville, Ky. 123
The Modern Treatment of the Digestive Disturbances of Infancy, by Prof. Dr. Wilhelm Stoeltzner, Germany. 159
The Importance of Applied Biology, by Charles C. Mapes, Louisville, Ky. 167
Recurrent Bronchitis in Children, by Charles Gilmore Kerley, M.D., New York. 175
Intussusception, by John B. Richardson, Jr., M.D., Louisville, Ky. 183
Colles Fracture, by E. Lee Heflin, M.D., Louisville, Ky. 211
The Relationship of Pulmonary Tuberculosis in Childhood (Hilum Phthisis) to the Phthisis of Adult Life, with a Comparison of their Symptoms and Signs, by J. P. Cullen, M.D., London, England. 214

VOL. XXVII, 1915

Causes of Obscure Fever in Infancy and Childhood, by Phillip S. Potter, A.B., M.D., Syracuse, N. Y. 216
Pyelitis in Children, by Geo. J. Laben, M.D., Papineau, Ill .. 224
Esophageal Stenosis Due to Typhoid Fever, by H. Horace Grant, A.M., M.D., Louisville, Ky. 258
Death from Carbolic Acid: Foreign Bodies, by John E. Kinchloe, M.D., Hardinsburg, Ky. 261
Infection of the Urinary Tract in Children, by Edward Clay Mitchell, M.D., Memphis, Tenn. 263
Appendicitis in Children, by Malvern B. Clopton, M.D., St. Louis. 271
Intestinal Toxemia of the New Born due to Retained Meconium by Philip Sheridan Potter, A.B., M.D., Syracuse New York. 283
Eugenics A Factor in Race Betterment, by J. Wallace Beveridge, M.D., New York City. 315
Pulmonary Tuberculosis with Laryngo-Pharyngeal Stenosis: Report of a Case, by Dunning S. Wilson, M.D., Louisville, Ky. 320
Report of Forty-Six Cases of Intubation, by E. W. Carpenter, M.D., Greenville, S. C. 324
The Better Way of Putting A Diaper on A Baby, by Samuel A. Visanska, M.D., Atlanta,Ga. 332
Summer Diarrhoea, by Edmund Cautley, M.D., F.R.C.P., London. 366
Large Infants, by A. R. Bizot, M.D., Louisville, Ky. 372
Prophylaxis in Scarlet Fever, by George L. Servoss, M.D., Reno, Nevada. 376
A Census Enumeration of Crippled Children in an Urban District, by Douglas C. McMurtrie, New York City 383
Prevention of Conception-Critic & Guide. 385
On the Relation of Tuberculosis in Children to the Tuberculosis Problem, by H. J. Achard, M.D., Asheville, N. C. 416
Orthopaedic Surgery, by A. H. Tubby, M.S.F.R.C.S. London. 424
Heart Disease in Childhood, by Henry Enos Tuley, M.D., Louisville, Ky. 431
Prophylaxis in Pediatrics: Institutional, by Harry R. Carroll, A.M., M.D., Cincinnati. .. 439
Diagnosis and Frequency of Trombosis of the Lateral Sinus, by James Royden Peabody, M.D., Louisville, Ky. 469
Recent Work on Children's Diseases, by Hugh Thursfield, M.D., London, England. 475
Treatment of Acute Gastro-Enteritis in Children, by Ernest H. Koch, M.D., Louisville, Ky. 480
Hygiene and the Prevention of Defects in Children Before and During School Age, by J. J. Quana, Texas. 484
The Evil Effects of Artificial Feeding of Infants, by J. Wallace Beveridge, M.D., and William E. Fitch, M.D., New York City, N. Y. 522
The Management of Breast Feeding, with Case Reports, by C. K. Johnson, M.D., Burlington, Vt. 532
Streptococcic Sore Throat with Edema of the Larynx and Paralysis of the Soft Palate, by Gaylard C. Hall, M.D., Louisville, Ky. 537
Therapeutic Suggestions in Childdren's Diseases, by Finley Ellingwood, M.D., Evanston, Ill. 541
Successful Delivery of Twins During Puerperal Eclampsia, by A. R. Bizot, M. D., Louisville, Ky. 580
Two Cases of Intestinal Obstruction, by B. F. Zimmermann, M.D., Louisville, Ky. 583
Pneumonia Complicating Measles by Henry B. Minton M.D., Brooklyn, New York. 586
Differentiation Between Labar Pneumonia and Appendicitis in Children, by Stanley W. Pallister, M.D., Brooklyn, New York. 589

VOL. XXVII, 1915

SOCIETY TRANSACTIONS

Studies in Hemolytic Jaundice: The Effects of Splenectomy.. 27
Acute Acid Intoxication in Infants and Children: Cases in Apparently Epidemic Form... 29
Melituria in Infants Suffering from Nutritional Disorders.... 29
Presentation of Cases showing the Effect of Blood Transfusion in Purpura Hemorrhagica 81
The Extent of Tuberculosis Infection Among the Children of New York Tenements as Evidenced by the Application of the Cutaneous Tuberculin Reaction 84
Experience with the Diphtheria Toxin Skin Reaction of Schick 86
Types of Pneumonococcus Bacilli and Their Characteristics.... 88
Pyloric Spasm................. 95
Congenital Hypertrophy of the Left Half of the Face in a Boy Seven and One-Half Years of Age.................... 95
The Rontgen Ray as a Diagnostic Help to the Pediatrist..... 96
An Application of the Rontgen Ray to Infant Feeding....... 97
The Rontgen Ray and Pneumonia 100
Discussion on Dr. Mason's Paper 100
Discussion on Dr. Mason's Exhibit 100
Dicussion on Dr. Mason's Demonstration 100
Miliary Tuberculosis of the Lungs 101
Rontgenograms Illustrating Birth Fractures and Artesia of the Esophagus 101
Thymus Construction........... 102
Types of Infant Stomach....... 102
Report of Four Cases of Hemorrhagic Diseases in the New Born Treated by Horse Serum 128
A Study of Certain Aspects of Epilipsy Compared with the Emotional Life and Impulsive Movements of the Infant..... 131
The Present Conception of Chorea 135
Anti-Mumps Inoculation....... 230
Clinical Distinctions Between Cerebral Intoxication, Meningism (Serious Meningitis) and Meningitis 232
The Surgical Treatment of Disease of the Stomach in Children 236
The Remote Effects of Bad Feeding 286
Blood Coagulation in Infancy... 288
The Treatment and Disturbances of Digestion in Infancy....... 288
Experiments with Malt Soup for Institutional Marasmus....... 291
Recent Observations in the Use of the Soy Bean in Infant Feeding 292
Can Pneumonia in Children be Aborted 296
Nuts and Fruits: Their Value in the Diet of Children....... 296
Prophylactic Vaccination for Varicella 339
Use of Sensitized Gonococcus Vaccine in Gonorrheal Vaginitis 341
Bacteria-Free Vaccine.......... 344
Experiences with Vaccines at the Massachusetts General Hospital 348
President's Address............ 386
Cubic Air-Space for Institutional Bottle-Fed Infants........... 386
Parapharyngeal Abscess as Distinguished from Peritonsilar and Retropharyngeal Abscesses 393
A Contribution to Ductless-Gland Therapy 446
Discussion on Dr. Haynes' Paper 446
Energy Metabolism of an Infant with Congenital Absence of the Cerebral Hemispheres......... 447
Discussion on Dr. Talbot's Paper 447
Report of Various Types of Iodiosyncrasy to Milk............. 448
Allergy to Common Foods...... 448
Discussion on Papers of Drs. Saunders and White and Dr. Schloss 449
Energy-Metabolism of a Two-Months Old Child Fed on a Prolonged Protein-Rich Diet. .490
Discussion on Dr. Hoobler's Paper 490
A Further Step in the Adaptation of an Artificial Food to Human Mildk 491

VOL. XXVII, 1915

Homogenized Olive-Oil Fat-Tree Milk-Mixtures in Cases of Difficult Feeding 492
The Total Non-Protein Nitrogen and the Urea of the Blood, and the Phenol-sulphonophthale in Excretion in Infancy and Childhood 493
Diagnosis and Frequency of Thrombosis of the Lateral Sinus 494
Treatment of Acute Gastro-Enteritis in Children 505
The X-Ray in the Diagnosis of Thoracic Disease in Children 550
Discussion on Dr. Freeman's Paper 550
The Composition of Woman's Milk 554
A Plea for Accurate Statistics in Infants' Constitutions 556
Discussion on Paper of Dr. Chapin 556
Some Studies on Sugar in Infant Feeding 560
Discussion on Paper of Drs. Dunn and Porter 560
The Indications for Treatment of Severe Diarrhea in Infancy... 592
Chorea and Syphilis 597
The Reducing Substance in Spinal Fluid 599
Acute Cerebellar Ataxia, with Report of a Case 601
Foreign-Body Pneumonia 601

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Traumatic Epilepsy Cured by Operation 32
How to Determine Whether Children are Normal 32
Medical versus Surgical Treatment of Pyloric Stenosis in Infancy 33
Pyloric Obstruction in Infants. 33
Criminal Tendencies and Mental Defects in Childhood 33
Vulvovaginitis in Children 34
Respiratory Infections in Infants' Wards 34
Mechanism of Immunization.... 35
A New Test for Beginning Peritonitis in Children 35
Salvarsan in Scarlet Fever 35
Treatment for Prolapsus Ani in Young Children 36
Eczema and Neurodermitis in Childhood 36
The Significance of Doehle's Inclusion Bosies in the Diagnosis of Scarlet Fever 37
Infantile Diarrhea in Brisbane.. 37
No Isolation for Measles and Scarlet Fever 38
Chronic Pulmonary Tuberculosis in Infancy and Childhood..... 39
Chronic Tuberculosis in Childhood 39
Acute Bacillus Coli Infection of the Urinary Tract in Children 39
A Contribution of the Pathology of Epidemic Poliomyelitis.... 40
The Hard Lot of the First-Born 41
Hypertrophic Stenosis of the Pylorus 41
Intramuscular Injections of Antitoxin in the Treatment of Diphtheria 42
Circumcision in the Masturbation of Female Infants....... 42
Trigger Finger 139
Weak Feet.................... 139
Treatment of Rotary Scoliosis... 140
Bone Splinting in Vertebral Tuberculosis 140
Some of the Deformities Following Infantile Paralysis....... 140
Prevention of Vulvovagnitis in Children 141
Enuresis 141
Voice Sign in Chorea.......... 141
Cerebrospinal Meningitis 142
Treatment of Pneumonia in Children 143
Technique of Breast Feeding.... 144
The Lange Gold Chloride Reaction on the Cerebrospinal Fluid in Infants and Young Children 145
Stoeltzner's Case-in calcium Milk in Summer Diarrheas of Infancy and Early Childhood.... 145

VOL. XXVII, 1915

Hunger of Normal Breast-Fed Infants 146
Asthma in Children: Its Relation to "Egg Poisoning".... 146
Neuropathic Diathesis.......... 147
Sprue Treated by Emetin Hydrochloride 147
Why Should the New-Born be Subject to Icterus........... 191
Fracture of the Elbow in Childhood 191
Foreign Bodies in the Larynx in Children 192
Goiter in Children 192
Diagnosis of Tuberculosis in Children 193
Problems of Childhood......... 193
Meningism in Scarlatina and Scarlatinal Uremia........... 195
Congenital Cyanosis without Auscultatory Signs........... 195
Motor Values in Speech........ 195
Acute Pemphigus Complicating Scarlet Fever............... 196
Hiccough in Tuberculosis....... 196
Tuberculosis ond Infants....... 196
Infantile Scurvy............... 197
Unappreciated Features of the School Lunch Movement...... 198
Severe Jaundice in the Newborn Child a Cause of Spastic Cerebral Diplegia................ 198
Treatment of Nocturnal Incontinence of the Urine......... 198
Frontal Sinusitis in a Girl Aged Seven 199
Fumiuating Infant............ 199
Ovarian Cyst with Torsion of the Pedicle in a Child Twelve Years of Age................ 199
Intraspinous Infection in Experimental Poliomyelitis......... 200
Bone Tuberculosis............. 242
Fractures in the Neighborhood of Joints 242
A Contribution to the Study of Joint-Bodies from within Present in Articulations.......... 243
The Inlay Bone Graft versus Lane Plates................. 243
Non-Vaccination and Virulent Smallpox 244
Alcoholism in Children......... 245
The New-born Babe: How to Care for It................. 245
Intussusception in a Baby...... 246
Abscess of Liver in Child....... 247
Casein in Infant Feeding...... 247
Atrophy in Infants............ 248
Treatment of Infantile Paralysis 249
Infantile Diarrhea............. 249
The "Jaw-winking" Pheuomenon 250
Pyloric Obstruction in Infants.. 298
Congenital Tuberculosis........ 299
Epidemic Annular Erythema.... 299
Fulminating Cerebro - Spinal Fever 300
Weights and Measurements of Infants and Children......... 301
Liver Abscess in an Infant..... 302
Bronchopneumonia Pseudocroup. 302
Mortality of Whooping Cough... 302
Bony Splinting in Cervical Pott's Disease 303
Chronic Pulmonary Tuberculosis in Infancy and Childhood..... 303
Duodenal Ulcers in Infancy..... 303
Observations of Wet- Nurses.... 304
Chronic Tuberculosis in Childhood 304
Treatment and Prophylaxis of Whooping Cough, Based on the Bordet-Gengou Etiology...... 305
Significance of the von Pirquet Test 305
Prophylaxis of Tetanus 306
Are Institutions for Children Necessary? 306
Tonsillectomy in Children....... 307
Surgery of Cleft Palate........ 307
Lange Gold Chloride Reaction on the Cerebrospinal Fluid of Infants and Young Children.... 352
Transplantation of Undescended Testicle................. 352
Sugar Content of the Blood in Childhood 352
Patent Ductus Arteriosus....... 353
Cerebellar Abscess in a Child... 353
Gastric and Duodenal Ulcer in Infancy and Childhood....... 353
Epidemic Cerebrospinal Meningitis 355
A Clinical Study of Pneumonia in Infants................. 355
Icterus in the Newborn as an Infectious Disease............ 356
Tumor of the Pons Varolii in a Child without Optic Neuritis.. 357
Nonpurulent Secondary Meningitis 358
Recent Methods of Treating Diphtheria 359

VOL. XXVII, 1915

A Consideration of the Relative Merits of the Albee Operation and the Hibbs Operation. 398
Cervical Ribs.................. 398
Referred Pain in Flatfoot...... 399
Tuberculosis of the Knee-Joint in Childhood................ 399
Shortening of the Healing Time of Bone Necrosis after Operation 399
Influence of Feeding and of Illness on the Growth of the Brain in the First Year of Life 400
Breast-Feeding 400
Phlyctenular Opthalmia........ 401
Elephantiasis in a Boy Aged Eleven Years................ 401
Cerebellar Abscess Not Due to Ear Trouble................. 402
Protective Vaccination for Varicella 402
Emulsions of Liquid Paraffin and Castor Oil in Treatment of Certain Types of Chronic Dyspepsia in Childhood.......... 402
Mouth Infection as a Source of Systemic Disease............ 403
Precocious Maturity in Girls.... 403
The Vaccine Treatment of Typhoid 404
Institutional Mortality of the New-Born 404
The Cause of Icterus Neonatorum 404
Serum Therapy of Epidemic Cerebrospinal Meningitis in Childhood 405
Hernia of the Stomach Through the Diaphragm 455
Recurrent Vaginal Fibroid Polypi in a Child. Specimen........ 455
Rupture of the Heart in a Child. 455
Leucocyte Counts during Digestion in Bottle-Fed Infants.... 456
Gonorrhea in Children......... 456
Ovarian Sarcomata in Children: An Account of Three Cases... 457
Exophthalmic Goiter in Children 457
The Mode of Infection and Etiology of Epidemic Poliomyelitis. 458
Inguinal Hernia in a Child Containing Entire Cecum..... 459
Tuberculosis Hip Disease....... 459
Nutritive Value of Proprietary Infant Foods................ 508
Schick Toxin Reaction for Immunity in Diphtheria......... 508
Beestings and Bee-poison as a Therapeutic Measure in Chronic Rheumatism of Children.... 508
Anterior Poliomyelitis: A Review of the Recent Literature in Regard to the Epidemiology, Etiology, Modes of Transmission, Bacteriology and Pathology 509
Early Development of Myositis Ossificans 509
Chronic Articular Rheumatism in Children 510
Chronic Lymphatic Leukemia Treated with Benzol......... 510
Pediatric and Orthopedic Surgery 511
Infantile Scurvy.............. 511
Some Phases of the Infantile Paralysis Problem........... 512
The Child and the Community.. 512
Treatment of Summer Diarrhoea of Children................. 565
Hunger Fever in the Newborn... 565
Treatment of Diarrhoea........ 566
Nuts and Fruits: The Value of in the Feeding of Children.. 566
A Microscopic Test for Pasteurized Milk................... 567
Breast Feeding: A Plea for Longer Intervals............ 567
Fixation of Fractured Bones in Infants and Young Children.. 568
Prophylaxis and Orthopedic Management of Anterior Poliomyelitis 569
Prophylaxis of Joint Conditions in Childhood................ 570
Early Congenital Bone Lues.... 570
Treatment of Scarlet Fever..... 571
Localizing Brain Symptoms as Early Events in Tuberculosis Meningitis 571
Anti-Mumps Inoculation........ 572

VOL. XXVII, 1015

BOOK REVIEWS

The Heart in Early Life, by G. A. Southerland, M.D., F.R.C.P., London. 43
Food Products, by Henry C. Shurman, Ph.D., New York. .. 43
Selected Addresses, James Tyson, M.D., LL.D. 43
The Medical Pickwick, by Walter M. Brickner, M.D., Saranac Lake, N. Y. 44
The Difficulties and Emergencies of Obstetric Practice Comyns Berkley, M.D., and Victor Bonney, M.A., M.D., M.C. 148
Diseases of the Skin, by James H. Sequira, M.D., Lond., F.R. C. S., London, F. R. C. S..... 148
Chemistry of Food and Nutrition, by Henry C. Sherman, Ph.D., 149
Infant Feeding, Its Principles and Practice, by F. L. Wachenheim, M.D. 149
Blakiston's Quiz Compend, by Henry G. Landis, A.M., M.D., 150
A Manual of Diseases of Infants and Children, by John Ruhrah, M.D., Baltimore, M.D. 201
Differential Diagnosis, by Richard C. Cabot, M.D., ... 201
Sex Morality, Past, Present and Future, by William J.Robinson, M.D., ... 202
Some Important Memoranda for the Busy Physician. 202
Old Age, Its Cause and Prevention, by Sanford Bennett 308
Surgery of the Blood Vessels, by J. Shelton Horsley, M.D. .. 308
The Ductless Glandular Diseases, by Wilhelm Falta, Vienna. .. 406
The Individual Delinquent, by William Healy, A.B., M.D., .. 407
Simplified Infant Feeding, by Roger H. Dennett, B.S., M.D., 407
The Care of the Baby, J. P. Crozier Griffith, M.D. 408
The Awakening of Woman, by Florence Guertin Tuttle. 409
Diet and Disease in Infancy, by Hector Charles Cameron, M.D., R.C.P. 460
Diarrheal, Inflammatory, Obstructive, and Parasitis Diseases of the Gastro-Intestinal Tract, by Samuel Goodwin Gant, M.D., LL.D........... 460
Nervous Diseases, by A. Aschaffenburg, Cologne; H. Curschman, Mayence 461
A Manual of Surgery, by Francis T. Stewart, M.D., ... 462
The Awakening of Woman, by Florence Guertin Tuttle 463
Emergency Surgery, by John W. Sluss, A.M., M.D., ... 514
Pediatrics, Edited by Isaac A. Abt., M.D. 514
Infant Health, by J. (Shawnet) Cameron MacMillan, C.M.B. .. 514
Mother and Baby, by Anne B. Newton, M.D., ... 515
Shattuck's Parliamentary Answers, by Harriette R. Shattuck 515
A Manual of Surgery, by Francis T. Stewart, M.D., ... 515
The Health-Care of the Growing Child, by Louis Fischer, M.D., 573
The Mechanistic View of War and Peace, by Geo. W. Crile, M.D., ... 573
The Popes and Science, by James J. Walsh, M.D., ... 574
The Physicians' Visiting List for 1916. 574
Senescence and Rejuvenescence, by Charles Manning Child. ... 604
The Practitioner's Encyclopedia of Medicine and Surgery In All Their Branches, by J. Keough Murphy, M.D. 604
Diseases of Infants and Children, by Henry Dwight Chapin, A.M., M.D., ... 605
The Nose, Throat and Ear, Their Functions and Diseases, by Ben Clark Gile, M.D. 606
Transactions of the Tri-State Medical Association, E. C. Register, M.D., President. 607
Bodily Changes in Pain, Hunger, Fear and Rage, by Walter B. Cannon. 607
How to Live, by Irving Fisher and Eugene L. Fisk, M.D. ... 608
What to Eat and Why, by G. Carrol Smith, M.D., Boston. .. 608
Practitioner's Visiting List for 1916 608
Backward Children, by Arthur Holmes. 609
What is Back of the War, by Albert J. Beveridge. 609

PEDIATRICS

VOL. XXVII JANUARY, 1915 No. 1

EDITORIAL

THE VALUE OF INTERNAL REMEDIES IN PEDIATRIC PRACTICE

Among internal remedies alcoholic stimulants take a high place. Children reduced by severe illness respond well to the action of alcohol, and a few timely doses of this medicine have often, in a doubtful case, turned the scale in favor of recovery. So, also, weakly children with poor appetites and feeble digestions often benefit greatly by an allowance of wine with their principal meal. Stimulants may be prescribed for the youngest infants, and in cases of great weakness may be repeated at frequent intervals. When the patient is very young and requires energetic stimulation, a small quantity of wine or brandy often repeated is to be preferred to a larger quantity given at more distant intervals. The remedy should not be continued too long. It must be remembered that a stimulant is not a tonic. It is given for an immediate purpose, and should be withdrawn or greatly reduced in quantity when the object has been attained.

Tonics, such as quinine, iron, the mineral acids, and vegetable bitters, are also of great value in the treatment of disease in the child. But they require to be given with judgment, and must not be administered indiscriminately because the patients look weak and pale. A feeble looking, pallid child is not always to be benefitted by iron and other tonics. Such a condition is often dependent upon a chronic form of dyspepsia, the result of repeated catarrhs of the stomach. In such cases a proper selection of food and alkalies given to diminish the secretion of mucus and neutralize acidity, will soon produce a marked improvement in cases where tonics have been given without good results. It is only when local derangement has been remedied that the tonic becomes useful. The same remarks apply to cod liver oil. This valuable remedy is inappropriate so long as any digestive derangement remains uncorrected. When the alimentary canal has been brought into a healthy state, the oil is of enormous service, and may be given in suitable doses to the youngest infants. It must be remembered, however, that the power of digesting fats in early life is not great. Under twelve months of age ten drops will be a sufficient quantity to be given on each occasion; and if any oil is noticed undigested in the stools, even this small quantity must be reduced.

In cases where, although nourishment is urgently required, oil cannot be digested, the remedy may be rubbed into the skin. The external application of oil is of service in all cases of chronic weakness and wasting. It is useful not only as a means of introducing nourishment, but also as an agent in promoting the action of the skin, which in most forms of chronic derangement is apt to become inactive and dry. The application should be made at night. Any oil is useful for the purpose, and it is not indispensable that cod liver oil be employed. The oil should be warmed and then applied to the whole body with a piece of fine sponge. At the same time if there is any special weakness in the back or elsewhere, vigorous friction with the oil may be used to the part it is desired to strengthen. Afterwards the child should be put to bed in a flannel night dress.

In the administration of drugs to young subjects, we must remember that the dose is not always to be calculated according to the age of the child, but that children have curious tolerance for some remedies and as curious a susceptibility to others. Opium, it is well known, should be given with caution. The remedy is, however, of extreme value, and if care be taken to begin with only a small quantity, and to postpone a second dose until the effect of the first has been ascertained, no ill effects can possibly be produced by the narcotic. Thus, for a child of twelve months old suffering from purging, if one drop of laudanum has not produced drowsiness, a second may be given in six hours' time; and the remedy will be well borne three times a day.

Belladonna can be taken by most children in large quantities. Sometimes the characteristic rash is produced by a small dose, but a much larger quantity will be required to dilate the pupil, and a further considerable increase before we can produce dryness of the throat or other physiological effect of the drug. It is often necessary to push the dose so as to produce dilation of the pupil. Many cases of nocturnal incontinence of urine show no sign of yielding until some symptoms are produced indicating that the system is responding to the action of the remedy. A child of twelve months old will usually take fifteen, twenty, or more drops of the tincture of belladonna three times a day; and often we can push the dose at this age far beyond this limit.

Besides belladonna children bear well quinine, digitalis, arsenic, ergot, and many other remedies. Mercury rarely salivates a child, but has often a powerful effect in deteriorating the quality of the blood. A child is usually left excessively pale at the end of a course of this drug.

PRECOCIOUS SEXUAL IMPULSES

To attach importance to ancestry, to parentage, to conception, to gestation and even the first infancy of the child may be considered by some as wandering away from the sphere of our subject, which is far from being the case. All our growing knowledge tends to show that equally with his physical nature the child's psychic nature is based on breed and nurture, on the quality of the stock and on the care at the early moments, when care counts for most, to preserve the fine quality of those stocks. When the period of infancy is past, we have not reached the foundations and potentialities of sexual life; we are, in fact, in the majority of cases witnessing its actual beginning. We are not now called upon to discuss the disputable point as to how far such manifestations at this age you can call normal. A slight degree of menstrual and mammary activity sometimes occurs at birth. It is claimed by some that the nervous and sexual activity has its first spring even at this early period and as the years go by an increasing number of individuals joins the stream until at puberty practically all are carried along in this great stream.

The question of sexual hygiene, more especially in its special aspect of sexual enlightenment, is not, however, dependent upon the fact that in some children the psychic and nervous manifestations of sex appear at an earlier stage than in others. It rests upon the larger general fact that in all children the activity of intelligence begins to work at a very early age, and that this activity tends to manifest itself in an inquisitive desire to know many elementary facts of life which are really dependent on sex. The primary and most universal of these desires is the desire to know where children come from. No question could be more natural; the question of origin is necessarily a fundamental one in childish philosophies. Most children, either quieted by statements, usually the misstatements, of their elders, or by their own intelligence working amid such indications as are open to them, are in possession of a theory of the origin of babies.

Thus it is that at a very early stage of the child's life we are brought face to face with the question how we may not wisely begin his initiation into the knowledge of the greatest central facts of sex. It is perhaps a little late in the day to regard it as a question, but so it is among us, although three thousand five hundred years ago, the Egyptian father spoke to his child: "I have given you a mother who has carried you within her, a heavy burden for your sake, and without resting on me. When at last you were born, she indeed submitted herself to the yoke, for during three years were her nipples in your mouth. Your excrements never turned her stomach, nor made her say, 'What am I doing?' When you were sent to school she went regularly every day to carry the household bread and beer to your master. When in your turn you marry and have a child, bring up your child as your mother brought you up."

THE MECHANISM OF IMMUNIZATION

The proteomorphic theory of immunity which appeared in American Medicine (Oct. and Nov. issues), by Drs. H. S. Williams and James W. Reveridge is worthy of the most profound study and consideration.

The original viewpoint enunciated by the authors regarding the role of the red blood corpuscle is not only unique but most remarkable in having been overlooked by scientists in the past. Then the method of explaining anaphylaxis which Williams and Beveridge have accomplished should place this work as an epoch making article deserving the most hearty commendation. Every physician should read this most valuable contribution on the proteomorphic theory of immunity.

The authors conclude this remarkable article with the following conclusions, which will subserve as a summary of the principal theses exposited in this valuable contribution to science:

1. The chief immunizing mechanism of the body is the cytogenic mechanism, of which the recognized members are the bone marrow, the spleen, and the lymphatic system. The active agents through which the process of immunization is carried out are the leucocytes and red blood corpuscles generated in the various organs of this system.

2. The prime function of the leucocyte, after it becomes a freely moving cell, is to facilitate and complete protein cleavage or digestion, preparing for assimilation (to the limit of its capacity) all foreign proteins that enter the blood stream. In pursuance of this function, it is provided with digestive enzymes, and with a mechanism for the production of special types of proteolytes to cleave an endless variety of protein molecules, and to counteract toxic proteins or enzymes due to bacterial activities.

3. The red blood corpuscle completes the hydrolysis of polypeptid and allied protein products that find their way into the blood stream. It absorbs or counteracts the toxic residual molecules that are not completely hydrolyzed; and it antagonizes the products of bacterial activity, producing antitoxins. When ultimately autolyzed or destroyed, chiefly in the liver, its gives its protein and enzymes to the blood stream, and its waste products are discharged from the body through the bile duct.

4. The chief work of synthesizing protein out of amino-acids in the organism resides with the mother cells of the cytogenic apparatus—notably the bone marrow and the spleen. But the cells of each specialized tissue—muscles, brain, glands—can on occasion synthesize each its own special type of protein, utilizing the amino-acid building materials. Each tissue can also, on occasion, hydrolize nitrogenous molecules of the polypeptid order, and give out antitoxic ferments in response to specific toxins. But as a rule the tissues are shielded by the red blood corpuscles from the necessity of performing these functions.

5. The vast multitudes of red blood corpuscles, with an

aggregate bulk of about four pounds in the ordinary human body, their substance having been synthesized by the mother cells out of amino-acids, constitute the chief source of the specific proteins in the blood stream, which proteins on being decompounded (with the aid of the lymphocytes) are the prominent sources of bodily energy.

6. Every cell that can unite with a foreign proteid product can produce an "anti-body" calculated to antagonize that product. The leucocytes and red blood corpuscles are the particular cells that come most in contact with such foreign bodies, and they are therefore the chief source of specific proteolytes and antibodies directed against the invaders. The presence in the blood stream of these specific proteolytes and antibodies, secreted by the leucocyte and red cells, and to a certain extent by the body cells (backed up by the presence of an adequate army of leucocytes and red cells themselves, capable of producing more of the antibodies under stimulus of invasion), constitutes the condition of immunity.

7. Immunization to bacterial disease is merely a special case of protein assimilation. It has in the past been as necessary to acquire immunization against the dietetic proteins—egg, beef, mutton, chicken, fish—and against "benign" bacteria as against the most virulent bacteria.

8. So-called harmless or benign bacteria are those that have long been with us, and which, therefore, the leucocytic mechanism has learned adequately to combat and control. Virulent bacteria are the relatively rare ones or those that have visited us infrequently. A relatively benign bacterium may become malignant, however, through changed conditions leading it to ingest unwonted types of protein; or through developing exceptional vigor; or through invading the system in excessive numbers.

9. Protein anayhplaxis of any type (including "serum disease") is merely a special protein intoxication, strictly homologous with protein poisoning from the toxins of virulent bacteria. It results when a general proteolytic (leucocytic) enzyome is present in sufficient quantity to hydrolyze the foreign protein partly, while the red-cell mechanism is temporarily exhausted, so that cleavage cannot be completed, and the tissue cells are attacked. Protein anaphylaxis is strictly homologous with protein immunization. They are different aspects

of the same subject corresponding respectively to the "passive phase" and the "active phase" of Wright's "opsonic index."

10. The activities of the cytogenic system, leading to an increase in the number of blood corpuscles and a stimulus to the activities of the individual corpuscles; and through these to completed protein assimilation and immunization, are governed in part by hormonic stimuli; the internal secretions actively engaged including those of the adreno-thyroid system and secretion from the duodenum.

11. The cytogenic system (including the bone marrow, the spleen, and the lymphatic glands) is a highly important member of the endocrinous system; the detached blood corpuscles are to be regarded as still a part of that system; and the study of the system as a whole offers a fruitful field for discovery of new methods in immunization and the treatment of infectious diseases.

12. The general theory of the action of the cytogenic system above outlined finds support in clinical observations of disease and in empirical therapy; and the theory itself gives important clues to the scientific measures, including an extension of serum-therapy and vaccine-therapy and the development of a new cyto-therapy.

Such, then, are some of the salient aspects of the Proteomorphic theory of immunization; a theory which postulates the cytogenic system as the chief immunizing mechanism, and its daughter cells, the leucocytes and red corpuscles, as the active direct agents in carrying out the beneficent functions of that mechanism.

It is not claimed that a complete demonstration of the truth of this theory in all its aspects has been presented, nor that such demonstration is possible with data at present available. Nor can it be supposed that all parts of so novel a theory have been correctly conceived. Yet, even as presented, it would appear that the theory throws light into a good many dark places of the realms of physiology and pathology.

In any event, we feel that the fundamental concept of the theory has been made sufficiently plausible to justify, and indeed to demand, a far larger share of attention for the leucocyte and the red corpuscle on the part of bacteriologist, pathologist, and practicing physician than has hitherto been accorded these small but highly important bodies.

PEDIATRICS

ORIGINAL ARTICLES

A DISCUSSION OF SOME FACTORS OF DISORDERS OF INTERNAL SECRETION IN CHILDREN*

BY TOM A. WILLIAMS, M.B., C.M., EDIN.

Ex-President Washington Society of Nervous and Mental Diseases;
Corresponding Member Soc. de Nural., Paris, Etc.: Neurologist to
Ephiphany Dispensary and Freedmen's Hospital
Washington, D. C.

Although it is sometimes stated that no matter what gland product is given a backward child, there will be improvement in growth and mentality, whether the diagnosis is hypothyroidia or the adipose-genital syndrome, yet it will be dangerous to generalize from the few instances hitherto on record. For it must not be forgotten that the thyroid and lymphoids have some functions in common, and hence confusion between the two syndromes caused by their respective deficiency is apt to occur. Thus, I have now under observation a woman, thought to be myxedematous by so good an observer as Osler 12 years ago, the progress of whose case shows a dyspituitarism so distinct as to give the picture of acromegaly, consisting of mandibular enlargement with prognathism, enlargement of the hands and feet—the latter by a size and a half—adipose with paresthesia, characteristic central headache, asthenia, and attacks such as described by Marks under the heading "Acromegalic State."

Such confusion regarding children must be very difficult to avoid; and the explanation of an error of diagnosis should be first excluded before we venture to infer that it is a matter of indifference whether we prescribe gland products so different as iodothyrin, chromafin, extractine, and posterior pituitary substance, even though we do admit the great power of such products as stimulants to growth.

Concerning the thyroid juice, we have to remember that its chief function seems to be activation of chemical reactions already prepared, rather than an actual participation in the metabolic equation. The hypothyroid child is merely sluggish, not idiotic or demented, the physiological processes are not changed in kind, but merely retarded. Even growth is not permanently arrested; and the proof of this is that thyroid feeding completely changes the clinical picture. Likewise, when the thyroid secretion is in excess, there is merely a speeding of the machine and its chemistry. It would seem that only when the speeding up preponderates upon some definite ogran which can pervert function is there produced anything more than a hypermetabolism.

---

*Remarks made before Pa. State Med. Assn., Sept., 1914.

For instance, the nymphomanic type of reaction so often seen in hyper thyroidism cannot be due to that directly, but may be due to the increased labilisection of the ovarian secretion caused by the thyroid juice. I say "may be" for we must take into account also the psychological determinants of sexual desire; and this will only be done when a series of proper analyses are made in such cases of hypo-thyroid nymphomania by men trained to weigh both the bodily and psychical factors in such cases.

I say this because of some experiences which indicate very strongly that the etiology of some cases of hyperthyroidism is in the main psychological; and also on account of the fact that states of fear, shame, and anxiety which produce thyroid hyper-activation often have to do with psychological situations concerning the productive function.

But, because of the diffusion of the thyroid juice throughout the circulating fluids, it must be remembered that this juice is ready to activate at once any organ whatever which happens to be extraneously stimulated at the moment. According, as the stimuli to reproductive activity are very abundant in community life, it is possible that the primitive factor of a psycho-sexual disorder may have to be sought for in an initial thyroid hyperactivation caused by a chemical agent, such as a toxin absorbed from the mucous membrane of the respiratory or digestive apparatus. The question can only be settled by the very careful analysis, both physical and psychical, of many cases.

For instance, a woman of 28 with hyperthyroidism, showing hyperplasia and eye-signs, was referred to me for psychological treatment, could trace back characteristic psychological reactions to the age of 13, and associates them with the tremendous mental tension and anxious emotion created by constant friction between her father and mother.

To attribute far-reaching and profound disorders to a tight prepuce, a deviated nasal septum, or errors of refraction or similar abnormalities supposed naively to create disturbances reflexly, is unworthy of the medicine of this day. Of course, I am not alluding here to instances where refractive error causes so much extra effort as to overload, or where a twisted septum creates respiratory difficulties or venoustasis, or where proper cleanliness is not secured because of a tight prepuce. None of these mechanisms is reflex, and all definitely demand interference. What I am referring to is the looseness with which the word reflex is impounded to serve as a cloak for ignorance of pathogenesis.

1705 N. Street, N. W.

ESOPHAGEAL STRICTURE: REPORT OF A CASE*

BY I. LEDERMAN, M.D.
Louisville, Ky.

The latter part of August, 1914, there was admitted to the Louisville Public Hospital, Miss G., aged eighteen, who had a stricture of the esophagus, said to have resulted from the swallowing of nitric acid. Dr. G. C. Hall was at that time in charge of the service, but I was called to examine the patient during his absence from the city, and found a stricture in the aortic portion of the esophagus, i.e., the location corresponded to the manubrium sterni. However, this had been determined before I saw the patient by the X-ray and bismuth test, therefore the results obtained by the two examinations exactly coincided.

A few days later Dr Hall returned and assumed charge of the case. I believe he experienced considerable difficulty in passing esophageal bougies of any size; at that time the girl could swallow only fluids with difficulty; the liquid merely trickled through the small opening; she was unable to swallow any semi-solid food. It was deemed advisable by Dr. Hall and the surgeon in charge that a gastrostomy should be performed.

---

*Clinical report before the Society of Physicians and Surgeons, Louisville, Ky., November, 1914.

After the patient had been anesthetized and by the aid of esophagoscopy alligator forceps were passed through the stricture. The gastrostomy assisted in demonstrating that it was not a false passage. Dilatation was then practiced with bougies up to No. 24 French sale. The girl in the meantime was fed through the gastrostomy opening; she gained in weight and improved in health.

When I went on duty at the hospital, October 1, 1914, probably ten days had elapsed before an attempt was made to pass a bougie. At that time it was found absolutely impossible to introduce a bougie of any size through the stricture which seemed again to have become impassible. After several futile attempts the girl was again anesthetized. Esophagoscopic examination was unsatisfactory without anesthesia as the parts were so extremely sensitive, although I had experienced no trouble upon the first occasion. Local anesthesia did not suffice to overcome the intense straining and gagging.

When the patient was placed under general anesthesia, October 12, it was readily demonstrated that the stricture had contracted to apparently its normal caliber. As no bougie could be made to enter the small passage, the alligator forceps were again used in the same manner that Dr. Hall had done previously, and the opening enlarged in this way until a bougie could be easily introduced. In dilatation I used a moderately flexible bougie which it was found could be passed without trouble, whereas a soft rubber tube could not. Before the patient left the operating table I succeeded in introducing a No. 24 F. esophageal bougie, but nothing larger.

Since October 12 dilatation of the esophagus has been practiced twice weekly, the size of the bougie being gradually increased. A No. 40 French bougie can now be passed with practically no difficulty. The gastrostomy wound has been allowed to close spontaneously and is giving no trouble. The girl is now able to eat anything she wants, and swallows anything that can pass through the normal esophagus. Until two weeks ago she was unable to swallow meat, but has no difficulty in doing so at this time. She has regained much of her lost flesh, and has left the hospital with the understanding that treatment is to be continued indefinitely.

The usual history of these cases is that the passage of bougies is required for a long time, it may be a year or even two years. These patients can be taught to use bougies themselves, and if they are faithful and persistent in the treatment, the majority of this character of esophageal strictures can be thus permanently cured.

DISCUSSION

Dr. Leo. Bloch: Some time ago I was called late one night to see a patient who was suffering intensely and apparently unable to swallow, although he had vomited a portion of the supper eaten a few hours before. He gave the history of typhoid fever two years previously, and as I had seen two or three cases of esophageal strictures following this disease, I thought this was possibly an old typhoid stricture. The next day he still complained of difficulty in swallowing, and I introduced an esophageal bougie without any trouble, although a soft rubber tube could not be passed.

The patient had no further trouble for about a year. He then developed a persistent cough which was particularly annoying at night when in the recumbent position. Some times afterward he again experienced difficulty in swallowing, and the cough persisted. The X-ray and bismuth test at this time showed esophageal obstruction due to an aneurism of the transverse portion of the aortic arch; that is, instead of this patient having an esophageal stricture, he had an aneurism which impinged upon the esophagus. Of course no more bougies were passed. The patient was placed in bed and the administration of increasing doses of iodine of potassium commenced. He had no history of syphilis, and the Wassermann reaction was negative. The patient did not improve very much and becoming uneasy said he was going to consult another physician.

Now comes the curious part of this report: This patient applied to another Louisville doctor who is trying to cure the aortic aneurism by "tapping" over the seventh cervical vertebra! He "taps" this portion of the spine for half a minute, then rests for half a minute, the process being continued until two and one-half minutes have elapsed. He follows this by the use of galvanism over the same region in the hope of stimulating the spinal accessory and causing the aneurism to contract! I understand he tells this patient that "he can see the aneurismal sac contracting." He claims to have cured many cases of aneurism by this method of treatment!

THE SPECIAL RESPONSIBILITIES OF SANITARY AUTHORITIES IN REGARD TO INFANT WELFARE*

BY JOHN ROBERTSON, M.D., B.Sc.
Medical Officer of Health, City of Birmingham, Eng.

I desire to draw the attention of this Conference to two points in relation to infant mortality which I think are not easily comprehended. The one is the magnitude of the harm done by ignorance and carelessness during the intra-uterine life and shortly after birth, and the second is the extraordinarily encouraging results that have accrued from definite action taken during the past ten or fifteen years in the prevention of infant mortality.

In regard to the first problem it is not altogether easy to give a precise idea of the extent of the harm done to young life. The fact that the infant mortality rate in an unhealthy district varies from 150 to 200 deaths per 1,000 births per annum does not convey very much information, because the statement is an isolated one, and it is somewhat difficult to compare it in its magnitude with anything else. To the lay public such a statement probably means little or nothing. Similarily a statement that one child in every five or one in every six dies before it reaches 1 year of age does not convey a clear cenception of the magnitude of the problem. Again, a statement of the total number of infants under one year of age who died in England during 1913 is very difficult to comprehend without a good deal of explanation.

I would, therefore, draw attention to the method adopted by the Registrar-General in his annual report for 1911, which gives for the first time a tabular statement showing the number of people who died in England and Wales at each age. When such a table is put in chart form a simple and very impressive demonstration is given of the mortality at any one age. In addition to having a chart prepared I have had a model made, which in a simple way appears to me to bring home the enormous problem of the mortality among infants to a layman's mind better than almost any other method I know of. The chart shows the figures for England and Wales, while the model shows the figures for Birmingham only. I can recommend such a model as a very good means of drawing attention locally to this problem.

---

*Read before the National Conference on Infant Mortality, Liverpool, England, July 2 and 3, 1914.

But all such models have their limitations. The waste of infant life before birth or at birth is not indicated by such a model, and if one takes the figures which have been recently quoted as approximately correct for still births, miscarriages, and abortions as equal in number to the deaths during the first year of life, one has at once to double the great sacrifice of life.

There is still the problem of damage done during the first year of life, causing ill-health in subsequent years. We have little or no means of measuring this other than the opinions of medical men and others who have devoted their lives to a study of the health of young children. At the end of the first year of life a large number of children are annually launched into their second year in an extremely debilitated and unwholesome condition; indeed, in such a condition that the mortality, as indicated in the model and the diagram, is very heavy in the second and third years of life. But what is even more important is the larger number of children who do not succumb but who are permanently enfeebled by conditions resulting from the same causes as those bringing about mortality in others. Such children one sees every day at our consultations, and within the last few years great attention has been drawn to these conditions at the medical examinations of entrants to our public elementary schools.

The second point that I desire to emphasize is the decided improvement which has resulted from defined action. The second diagram shows the rate of infant mortality in England and Wales, and in my own district of Birmingham, and in each case, since special public attention has been drawn to the need for concerted action to attack infant mortality, the rate has gone down annually. This is well shown on the black curve on the chart. In order to eliminate the very violent disturbances which take place in the rate of infant mortality due to climatic conditions I have both in the case of England and Wales and in the case of Birmingham subtracted all deaths from gastro-intestinal diseases and calculated the rate of mortality on the remainder. This clearly shows that climatic conditions in recent years have not been the cause of the reduction that has taken place.

One cannot get away from the fact that this reduction is very much like that which has followed many other great reforms, i.e., firstly, attention drawn widely to the problem without much resulting, secondly, one district after another applies remedies and, thirdly, according as these remedies are efficient the rate of mortality has decreased. The greatest of all remedies has always been and must continue to be the spread of knowledge as to the existence of evil and the reason for the evil. Largely, the reduction which has occurred in nearly all districts is due to the spread of such knowledge Speaking generally, it is much easier to spread information in country and suburban districts than among the degenerates in the slums of the town. It is also much easier to get good results in the suburban districts of a large town than in the central slum areas.

It is, therefore, interesting to note from the diagrams the good results which have been obtained in the rural county of Wiltshire with relatively little effort, while on the whole results not nearly so good have been obtained in the central areas of Birmingham as a result of very great effort.

The prevention of infant mortality must depend on many forces all working together, but of these I am satisfied that the greatest is education in its widest sense. What has been accomplished along these lines is sufficient to encourage us to go on and insist on a continuation of the reduction in mortality which has now set it.

Statistically there are a few other facts I should like to draw attention to before outlining what I think requires to be done from an educational point of view.

First, let me point to the fact that infant mortality is a class mortality. I show you a map of my own city which indicates quite clearly that the mortality in the central areas is considerably more than double what it is in the suburbs. We have very many artisan areas where the rate of mortality is less than half of what it is in the slum areas of the center.

I feel certain that the main causes of these great differences are not that the housing conditions are much worse, nor the conditions of poverty greater, or that drunkenness and vice are more prevalent in the slum areas, but that the mothers in these areas suffer from a greater ignorance as to what constitutes healthy and reasonable conditions for their babies, than do the mothers in the suburban ring. To guard against misapprehension I must, of course, admit that housing, poverty, drink and vice do play an important part in the production of infant mortality, but not the most important part.

The infant mortality rates according to the occupations of the infant's father which appeared in the Registrar-General's report for last year for the first time afford strong confirmatory evidence.

Father's Occupation	All causes	Tubercle	Diarrhoea and Enteritis
Artists	27	—	10.1
Merchants	30	—	7.5
Doctors	39	0.8	8.6
Naval Officers	41	2.9	5.9
Solicitors	41	1.2	9.7
Army officers	44	—	2.9
C. E. clergy	48	—	5.2
General laborers	167	5.0	44.4
Foundry laborers	171	5.2	58.4
Dock laborers	172	5.3	51.6
Iron workers	172	5.5	53.5
Earthenware workers	172	8.6	60.2
Brass workers	174	4.0	57.7
Navvies	187	8.3	62.4
Factory laborers	191	6.6	57.6
Scavengers	192	8.8	59.7
Costers, hawkers	196	5.6	51.1

If the infant mortality rate in the worst area of our city had occurred uniformly last year all over the city it would have meant the deaths of 2,380 other infants who are now alive.

I have said something about the waste of human life resulting from abortions, miscarriages and stillbirths, which together is probably about equal to that from mortality during the first year of life. I believe largely that this is preventable and that want of knowledge is here again the main cause of the waste.

To give the practical outcome of my experience in this short paper I am of opinion that, for the reduction of infant mortality we must look to educational methods to a larger extent in the future than in the past. I do not mean to the exclusion of everything else but this must be our main line of attack.

There appear to me to be three lines of action all of which require concurrent attention.

(1) There is the education of the general public. The fact that we have a great and unnecessary evil in our midst is the strongest possible stimulus to action.

(2) There is the education in various ways of the present generation of mothers.

(3) There is the education in schools and otherwise of the rising generation of mothers and fathers.

This last method is, I think, capable of great development in the direction of insuring that every boy and girl in our public elementary schools leaves with a really good working knowledge of what constitutes a healthy condition of living This duty devolves on our education authorities who have so many other duties to perform that this, the most important of all, appears to be in danger of receiving far too little real attention. If we can induce the Board of Education to require a very much higher standard than at present we shall accomplish a great and real advance in the near future.

As regards the education and care of the present generation of mothers and their babies I hope that before this paper is read certain announcements of real importance will have been made as to Government encouragement to local authorities to make progress in this direction. In the past I am sure much more would have been done by local authorities but for the Government auditor who has hindered progress in this and in so many other directions. The work done by health visitors. by consultations. and by the numerous voluntary societies has had a direct and appreciable effect in reducing mortality and illness by educational means. I am so convinced of the value of such organizations that I think the time has come to require this provision in every town.

Then. there is the larger campaign of keeping the general public informed as to the real facts of the problem of infant mortality and the damage done to the stamina of the nation by ignorance in the early years of life. I feel strongly that this, like other problems, can only be met by keeping the central facts before the public whenever occasion can be found.

ANTE NATAL HYGIENE AND ITS RELATION TO STILL AND PREMATURE BIRTHS AND MORTALITY IN THE FIRST MONTHS OF LIFE

BY A. K. CHALMERS, M.D.
Medical Officer of Health, Glasgow

When the present movement for the reduction of Infant Mortality began in this country, barely ten years ago, the dominant note in the movement was the high average rate which prevailed throughout the country, and the very obvious differences which separated the rural from the urban rate. Sometimes, also, differences, quite as marked, were apparent when the comparison was limited to the social groupings of individual populations.

It was further recognized that the causes of infant deaths were not equally distributed throughout the first twelve months of life, and that these occurring during the second half of the year tended to assume the characters of those occurring in later life, while the deaths occurring during the second, and particularly during the first three months, were, in an increasing degree, attributed to causes which implied defect in the germ-plasm, rather than failure of the individual child to withstand external influences adverse to health.

The importance of this recognition gained in significance from the unequal distribution of infant deaths throughout the year, for while one-third of the whole occurred in the first month after birth, and one-half before completing the three months, it was seen that between the rates of the third and fourth quarters there was little difference, and that both together contributed less than one-third of the whole.

Still another feature of outstanding importance in connection with those early infant deaths is the refractory character of the rates they produce.

A very considerable reduction in the death-rate among infants in the third and fourth quarters of the first year has occurrer during the past forty years, but until the last decade this was less obvious during the second quarter (3-6 months), and not at all in the period 1-3 months. The first decade of the present century has, however, shown some improvement in this respect.

The curve of the infant death-rate, indeed, is in a large measure determined by that of the first six months (Chart), and two-thirds of the deaths in the first quarter occur during the first month. The following figures, showing the rates in Glasgow in each of the first three months, and for the whole year, illustrate this:

	Weeks				Months			Total 1 M'ths	Total 3 Year
	1	2	3	4	1	2	3		
Males..	27.15	6.89	6.53	4.74	45.33	14.14	10.38	69.85	142.88
Females	22.31	5.03	4.69	3.70	35.77	9.49	8.50	52.76	112.98

In passing it should be noted that, even in the first days of post-natal life, the greater tendency to death among male children is already well marked.

There is obvious reason, therefore, for regarding the causes of death in the early weeks of life as forming to a large extent the center of the problem of infant mortality, and at is a natural outgrowth of this that the enquiry should be pushed into the pre-natal period.

Causes of Death in the First Month of Post-Natal Life.

Interest thus becomes centered in the principal causes of death during the first four weeks of life, and the following table has been constructed to show these:

GLASGOW—DEATHS IN FIRST 4 WEEKS FROM SEVERAL CAUSES
Per 1,000 Births, During 1909-11

	Male		Female	
	4 W'ks	1 Year	1 Year	4 W'ks
I. Immaturity	32.03	42.84	25.84	33.63
II. Diseases of Respiratory System..	2.95	30.38	3.02	23.04
III. Diseases of Digestive Organs...	2.56	22.43	1.49	16.63
IV. Diseases of Nervous System....	1.69	8.88	1.31	8.16
V. Tuberculosis Diseases	.09	6.99	.03	5.48
VI. Accidents at Birth	.69	.69	.59	.59
VII. Infectious Diseases	.30	15.92	.31	13.96
VIII. Syphilis	.54	1.96	.40	1.81
IX. Suffocation	.54	1.26	.44	1.31
X. Other Forms of Violence	.15	.63	.09	.31
XI. All Other Causes	3.79	10.90	3.05	8.06
	45.33	142.88	35.77	112.98

It needs no argument to show that until we have a clearer conception of the causes which lead to death from immaturity, we cannot but fail to make any considerable impression on the volume of deaths which occur during this period of infant life. The greater tendency to death among males which I have already referred to is here again illustrated by the group "Immaturity." It is unnecessary at the moment to consider in any detail what this group is composed of, more especially as we are not in possession of the facts which would lead to inferences of any value. But the evidence suggests that the importance we have hitherto been accustomed to attach to "Occupation" as the dominant cause of the higher death-rate among males at later age-periods is in need of revision, in the light of what would appear to be a law of life among civilized communities at least, that the male enters life with a greater handicap—a greater tendency to death than does the female of the human species. The question whether this sex difference also dominates the proportion of male and female still-births and ante-natal deaths generally can only be answered when provision is made for the registration of children born dead at any period subsequent to the determination of sex.

In other words, the problem of infant mortality is not confined to the year which follows birth, but extends into the ante-natal period.

National returns do not give sufficient details to admit a comparison over any considerable period of the deaths in the first weeks of life, but in the following table the death-rates in the first three months, together with the corresponding rates between 3-6 and 6-12 months, are compared at various census periods since 1870, three years' deaths being taken in each case:

GLASGOW

Death Rate at 3, 6, and 12 Months per 1,000 Births

	3 Mon.	6 Mon.	12 Mon.	Total
1870-2 (R.G.)	72	31	67	170
1880-2 "	65	25	58	148
1890-2 "	70	25	54	149
1900-2 "	72	26	47	145
Per cent reduction, 1870-2, 1900-2 ...	—	16	30	15
1908-10 (R.G.)	63	23	44	130
Per cent reduction, 1870-2, 1908-10 ..	13	26	34	24

At ages 3-6 and 6-12 months the rates are now lower than at any former period, and 26 and 34 per cent. respectively below the rates in 1870-2.

But at ages 0-3 months there has been no such continuous decrease, and although the rate of 1908-10 is 13 per cent. lower than in 1870-2, it was almost as low in 1880-2, while fairly uniform round about 70 per 1,000 in 1870-2, 1890-2, and 1900-2.

The influence on this of fluctations in the diarrhoeal and respiratory rates may just be mentioned, for although the reduction,-3 months in the past ten years, corresponds with that which has taken place in the total infant rate (and would seem to suggest that the efforts which have been made within the past decade to reduce the infant mortality rate have also, to some extent, influenced the death-rate under three months), this reduction would appear to be confined to causes other than those forming the "Immaturity" group, which we have seen to form so large a part of the rate under one month. (Chart.)

The sub-divisions of the "Immaturity" group are shown by the lines marked "A" and "B," from which it would appear that deaths from premature births and congenital defects under three months are credited with an increase which is counterbalanced by the reduction shown for deaths from atrophy and debility, but have no share in the reduction which has taken place in the total infant rate since 1897.

For the same period (1881-1910) similar information regarding deaths from immaturity among children under one year is taken from the English Registrar-General's annual reports, and represented in the following table.

To some extent the comparison is not quite parallel, as a number of deaths credited to immaturity occur after the third month, but the diagram shows substantially the same variations.

In order to enquire more closely into the causes of death during the first four weeks of life, I have had recourse to local statistics, and submit the following summary of the death-rates in each week of this period from the causes included in the "Immaturity" group:

GLASGOW, 1913-12.—Death Rate per 1,000 Births from Immaturity
(1) Premature Birth, Congenital Defects, and Atelectasis
(2) Atrophy and Debility.

	1st Week		2nd Week		3rd Week		4th Week		Total	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Av., 1903-07	14.99	5.60	2.25	1.80	1.57	1.81	0.89	1.13	19.71	10.34
	20.59		4.05		3.38		2.02		30.05	
Av., 1908-12	16.87	3.99	2.55	1.23	1.78	1.30	0.90	1.01	22.10	7.52
	20.86		3.78		3.08		1.91		29.62	

As a complement to this I include the following figures for the same periods, showing the rates per 1,000 births from the other causes which make up the total of the deaths in the first four weeks of life:

Cause of Death	Average, 1903-07	Average, 1908-12	Percentage Difference
Immaturiey	30.05	29.62	— 1
Respiratory Diseases	2.63	3.10	18
Digestive Diseases	2.24	2.07	— 8
Nervous Diseases	2.17	1.72	— 21
Tubtreulous Diseases	0.10	0.07	— 30
Accidents at Birth	0.81	0.77	— 5
Infectious Diseases	0.55	0.36	— 35
Syphilis	0.31	0.42	35
Suffocation	0.57	0.52	— 9
Other Violence	0.04	0.11	175
All Other Couses	1.05	2.82	169
Total	40.53	41.46	2

Among the higher rates here stated are increase of 18 per cent. from respiratory diseases and 35 per cent from syphilis.

During the ten years covered by this table the total infant deaths ascribed to syphilis numbered 400, 197 being males and 193 females. The proportion of these occurring in the first three months was 67 per cent., in the second three months 21, while in the second half of the first year it had fallen to 12 per cent., and the backward grading of these proportions is in keeping with what we know of the effects of syphilis in causing miscarriage.

Pre-natal Conditions.—Reliable information as to pre-natal conditions is extremely difficult to collect, but is most readily approached through an enquiry into the conditions precedent to still-birth. Accordingly I have taken all still-births regarding which information could be collected, and for purposes of comparison the live births attended by midwives in certain selected districts, representing two poor industrial wards, two good working-class wards, and two better-class wards of the city.

Sex Ratio of Still-Births.—Of 26,008 births notified during 1913, 1,266 or 4.4 per cent were still-births. The ratio of male to female children among still-births was greater than among children born alive, being 12 to 10 in the former and 11 to 10 in the latter. A large proportion, 40 per cent., of these still births are said by the mothers to have been born prematurely, as against only 2.5 per cent. of the live births, but the obvious desire of the mother to explain a still-birth as premature probably discounts to some extent information obtained in this way. The figures may, however, be quoted as illustrating all that remains of substantial evidence in the matter.

Health of Mothers.—Here again the probable desire of the mother to find explanation of a still-birth in the condition of her own health may explain the divergence, but in the case of 1,898 children born alive fully 88 per cent. of the mothers stated they were in excellent health, whereas less than 50 per cent. of the mothers of still-born children admitted this, while 11 per cent. of the mothers of still-born children complained of bad health as against 2 per cent. only of the mothers of live-born children.

Previous Miscarriages.—The importance of health of the mother gets fuller illustration when considered in relation to former miscarriages, and the following table illustrates the need for more complete knowledge of maternal health during the pre-natal stages in the uniformly larger proportion of mothers of still-born children who in former conceptions have miscarried. The foregoing figures have reference to the mothers of 573 still-births and 1,919 live-births, and in these groups the number who had former miscarriages are stated in the following table:

Miscarriages No. of Previous	Mothers with		Per 1,000 Mothers each Class	
	Still-Births	Live-Births	Still-Births	Live-Births
1	28	46	50	24
2	11	20	20	11
3	5	6	9	5
4	1	5	2	1

Summarising this table, it appears that 50 in every 1,000 mothers with still-births had 1 former miscarriage, 20 had 2, 9 had 3, and 2 had 4 or more, while the corresponding proportions among mothers with live-births were 24, 11, 5, and 1.

Previous Still-Births.—This tendency to recurrence in the same person is even more strikingly illustrated by still-birth. Among the mothers of still-born children 132 per 1,000 had 1 previous still-birth, 75 had 2, 42 had 4 or more, while the corresponding ratios among the mothers of live-births are 73, 13, 5, and 5.

No. of Previous Still-Births	Mothers with		Per 1,000 Mothers	
	Still-Births	Live-Births	Still-Births	Live-Births
1	74	138	132	73
2	42	25	75	13
3	18	9	32	5
4	10	8	18	5
5	5	—	8	—
6 and Over	9	1	16	1
Total Mothers	158	181		
" Still-Births	338	233		

SUGGESTIONS FOR FURTHER ACTION

There would thus appear to be a need for further action along three specific lines, and I place them in the order which it seems to me their importance requires:

(a) Clinical.—Spencer a number of years ago carried out a most suggestive enquiry into the pathological appearances of still-births, and showed how large a proportion of these presented visceral hemorrhages. At the time of the enquiry it was probably impossible to go beyond the suggestion that these arise from injury by pressure in the maternal passages during the process of parturition. Now, we shall ask whether these injuries resulted from any antecedent lack of vitality in the tissues of the child which made them liable to suffer from pressure in this form. There is also need for collecting information regarding the period when movement was last felt by the mothers of still-born children, with the view of determining the time-relationship of the death of the child to the actual period of its birth. The mother's health also during pregnancy is obviously of equal importance, and one welcomes the recent decision of the Local Government to conduct an enquiry into this on the lines suggested by the Wassermann reaction; although a recent local effort with a similar object has convinced me that mothers do not yet appreciate the importance or bearing of this.

In another direction, however, the means seem to me already available for collecting the information, and at the same time making effort to avert the misfortune of a still-birth while ensuring that some at least of the maternal risks are avoided, especially the conditions which predispose to puerperal eclampsia.

(b) Administrative.—In the last paragraph I have had in view the question which has so often been raised, whether the maternity benefit provided by the Insurance Act could not be so administered as to provide for the mother, during at least the later months of pregnancy, such medical guidance as the condition sometimes demands.

(c) Legislative.—The Registration of Still-Births.—Dudfield and Ballantyne especially have recently focussed the argument for the registration of still-births in a convincing manner, and I would only add that until by some such means the causes of pre-natal death can be enquired into, much of the difficulty which surrounds post-natal deaths from immaturity will remain obscure.

SOCIETY TRANSACTIONS

JOINT PEDIATRIC MEETING

Annual Joint Meeting of the New England Pediatric Society, the Philadelphia Pediatric Society, and the Pediatric Section of the New York Academy of Medicine. New York, November 5, 1911*

DR. WILLIAM M. POLK

President of the New York Academy of Medicine
In the Chair

Studies in Hemolytic Jaundice; the Effects of Splenectomy.—Dr. Edward B. Krumbhaar, of Philadelphia, described the experiments which Doctor Pearce, himself, and other colleagues had been carrying on during the past three years in the research laboratory of the University of Pennsylvania, and discussed the bearing of this experimental work on the clinical aspects of the various types of splenomegaly with anemia. They had first studied the relation of the spleen to hemolytic jaundice, but soon found themselves confronted with the broader problem of the relation of the spleen to blood formation and destruction in general. This study had brought out many explainable facts and some that were paradoxical. Their first experiments confirmed and elaborated the earlier observations of Banti and Joannovics, who had found that it was more difficult to produce jaundice by means of hemolytic serum in splenectomized than in normal dogs. Attempts to explain the cause of this phenomenon which was directly related to clinical splenectomy for the cure of various conditions associated with hemolytic jaundice, led them to study the blood changes following splenectomy. Anemia always developed reaching its maximum about the third week and falling to normal in about ten months. Pearce, Karsner, and Peet found that the resistance of the red cells was increased after splenectomy, both to hypotonic salt solution and to immune serum. Austin found that the greatest resistance to jaundice occurred at the same time as the greatest anemia developed, and to test the connection between the two, gave hemolytic serum to animals made anemic in other ways. He, himself, had found this same resistance and had concluded that the phenomenon was partly due to the more resistant erythrocytes, and partly to the fact that less blood was destroyed because there was less present to be destroyed. Some authorities, in testing the blood forming powers of the spleen, by comparing the blood going to and that coming from it, believed they had found more red cells, white cells and hemoglobin in the splenic vein. Their experiments along these lines had been negative, and it seemed that they must accept the theory that the red cells, at least, were formed only in the blood marrow. In seeking an explanation of the anemia following splenectomy, Asher and his pupils had attributed the increased anemia to the fact that increased amounts of iron were lost through the stools, but here, again, their experiments had failed to confirm such explanation. They had found, however, that injection of splenic extracts intraperitoneally had a marked temporary effect in raising the count of erythrocytes, hemoglobin, and leucocytes, owing presumably to stimulation of the bone marrow. A possible explanation of the anemia following splenectomy was therefore that the bone marrow was deprived of a stimulating hormone. Explanation of the later recovery from anemia might also be found in that the lymph nodes were found enlarged after splenectomy and presumably had taken over some of the function of the spleen. Although splenectomized dogs showed less tendency to jaundice when hemolytic agents were administered, nevertheless such agents caused a greater fall in blood counts, more lasting damage, and greater fragility of the red cells than in normal dogs. Apparently the lessened tendency to jaundice was connected in some way with the anemia caused by splenectomy, while the lessened power to recover from the hemolytic anemia must be attributed to a loss of some specific substance from the spleen. Banti had brought forth evidence of special hemolytic activity of the splenic extracts and of dissociated hemoglobin in the splenic vein, but their observations had failed to substantiate these findings. Joannovics and Pick had shown that chronic toluylenediamine poisoning caused fatty changes in the liver with liberation of unsaturated fatty acids, and Eppinger and King had shown that after splenectomy the amount of blood fat and cholesterin rose and the iodine number (combining value of the unsaturated fatty acids) of the blood dropped, indicating lessened degrees of hemolysis. In clinical conditions associated with blood destruction, they also had found an abnormally high iodine number, and this was reduced after the case had been improved by splenectomy. Hence, the unsaturated fatty acids were well known to be hemolytic agents, and the lessened blood destruction after splenectomy might thus be explained.

---

*New York Medical Journal.

Doctor Krumbhaar then described the different types of primary splenomegaly with anemia, namely, Gaucher's, Banti's and von Jacksch's, and the two types of hemolytic jaundice, the Hayem-Widal, or acquired form, and the Chauffard-Minkowski, or congenital or hereditary form. A comparison of these conditions showed that Gaucher's disease had but little in common with the other types of splenic anemia, and though the negative character of the symptoms might cause it to be confounded with Banti's disease, pathological examination should admit of a differential diagnosis. Although the etiology of Banti's disease was unknown, evidence pointed to the close relationship of the spleen. One would not expect the removal of a large fibrotic organ to be attended with marked somatic changes, and it was precisely in the earlier stages of the disease that splenectomy had proved most beneficial. The anemia infantum pseudoleuchæmia of von Jacksch was in all probability not an independent condition, but represented an atypical response of the infantile hemopoietic system to one or other of the primary diseases of the blood. The acquired and congenital types of hemolytic jaundice with splenomegaly possessed rather characteristic differences, and he considered it advisable to follow the Continental custom and consider them as independent conditions. In the congenital type the resistance of the red blood cells to hypotonic salt solution was much diminished, and this furnished a simple differential test. (The author described the technic which they had used.) The symptoms of these types of hemolytic jaundice with splenomegaly were a chronic enlargement of the spleen existing with acholuric nonobstructive jaundice, and anemia, frequently paroxysmal in character and varying in intensity. Increased blood destruction was indicated by increased urobilin in the urine, and various characteristic changes were found in the blood. The red cells showed a diminished resistance to hypotonic salt solution; there was an increased number of reticulated cells with vital staining, and in the acquired form the phenomenon of autoagglutination of the red corpuscles. Patients having the congenital form were often more icteric than sick, while the acquired form was usually ushered in by a definite attack of illness, the anemia became more grave, and the patient was distinctly more anemic than jaundiced. The congenital form appeared to be more a congenital dystrophy of the hemopoietic system, rendering the red cells more easily destructible. The writer then discussed the morbid anatomy in hemolytic anemia, reviewed the various therapeutical measures that had been tried for the condition, all of which seemed to be ineffectual, and stated that splenectomy seemed to offer the most hope for improvement or cure and should be considered, with due regard to conservatism, in all diseases in which there was evidence of increased blood destruction referable to the spleen. In early Banti's disease and hemolytic jaundice, at least, the results had been excellent. In pernicious anemia, although improvement had followed in some cases, the value of splenectomy was more dubious, and this grave operation should be attempted only where the indications were clear and other methods had proved unavailable.

Acute Acid Intoxication in Infants and Children; Cases in Apparently Epidemic Form.—Dr. Carleton R. Metcalf, of Concord, N. H., presented a report of an epidemic of acute acid intoxication which occurred in Concord during the winter of 1913-14. There were in all 200 cases with nine fatalities. The tabulated report covered 100 of these cases. After considering such etiological factors as age, environment, milk, water, diet, neurotic temperament, the writer stated that none of these factors alone nor in combination accounted for the outbreak. The tabulated report showed the frequency of such symptoms as diarrhea, vomiting, wasting, retracted abdomen, abdominal pain, icterus, etc., and presented a description of the stools, vomitus, and urine. The treatment consisted chiefly in dietetic measures associated with the administration of soda and citrates. The author reviewed the theories in regard to the saurce of acetone bodies and their relation to autointoxication, and the bacteriological findings in the series.

Melituria in Infants Suffering from Nutritional Disorders.—Dr. Oscar M. Schloss, of New York, considered primarily the nature and significance of the reducing substance which commonly appeared in the urine of infants affected with nutritional disorders. The sugar which was used in metabolism was carried by the general circulation, and obviously the sugar which appeared in the urine, was derived from the blood sugar. According to the results of recent work, the normal blood sugar in infants ranged from 0.07 to 0.11 per cent., figures which were practically identical with those obtained for adults. There was a tendency for the blood sugar to maintain a constant level but striking changes might occur after the ingestion of carbohydrate food. There was often a definite increase in the blood sugar shortly after a meal, which reached its maximum in from one to one and one-half hour and then decreased. This increase might be effected by starch as well as sugar, though the increase was slower and of less degree. Owing to this fact the blood for examination was withdrawn about three and one-half hours after a meal. There was a direct relationship between increased blood sugar and melituria. As a rule a continued increase in blood sugar led to an excretion of sugar in the urine, although this effect might not be immediate. Often the melituria was preceded by the hyperglycemia for some time. A detailed consideration of the significance of increased blood sugar could be of little benefit since there were many essential factors still unknown or under discussion. It seemed safe, however, to assume that hyperglycemia meant a disturbance in the balance between mobilization and consumption of sugar, provided that the patient was afebrile and the diet normal. The detection of a reducing substance in the urine of infants affected with gastroenteric disorders was by no means a recent finding. Finkelstein and Meyer were led to attach great importance to the melituria in nutritional disorders. They divided the cases into two groups: (1) Those in which the appearance of lactose in the urine was considered to be indicative of an intestinal lesion through which lactose was absorbed before it was split by the inverting enzymes of the intestinal secretion. (2) Those cases in which galatose was found in the urine, and it was thought that the underlying cause was a diminished sugar tolerance, the liver probably being at fault.

Doctor Schloss's work consisted in the study of the blood and urine of 235 babies. The preliminary tests of the urine were made by the reagents of Benedict and Nylander, and if the reducing substance was present in sufficient quantity further tests were carried out to determine its nature. There were forty normal infants, whose blood sugar was normal and who were free from digestive disturbances, and none showed the presence of sugar in the urine. The remaining 195 cases represented nutritional disorders ranging from the milder disturbances to those of severe intoxication. For the sake of convenience the cases were roughly divided into three groups, mild, moderate, and severe. Doctor Schloss demonstrated by means of charts that there was an association between the increased blood sugar and the presence of sugar in the urine As a rule the cases with melituria showed hyperglycemia. As to the nature of the sugar in the urine, in most instances the percentage ranged from 0.05 to 0.1 per cent. In such cases a determination of its nature with any degree of accuracy was impossible. In twenty-seven cases the urine at some time contained one per cent. or more of sugar, and tests made to determine its nature showed that it was usually galactose or dextrose. Lactose occurred, but not alone, being always associated with galactose.

The important facts brought out by this study were: Melituria was always accompanied by an increase in blood sugar and the sugar in the urine was not a monosaccharide. These results indicated that a gross lesion of the intestine was not a direct cause of the melituria, but that the direct cause was a lowered tolerance to sugar. Definitely to determine this tolerance, tests were made, the results of which showed conclusively that there was a lowered tolerance to sugar in the nutritional disorders.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Traumatic Epilepsy Cured by Operation.—Dr. William M. Lesynsky presented a man, thirty years old, before the New York Neurological Society, (Medical Record), with a negative family history, whose personal history was uneventful up to the age of six years. At that time he fell from a height, receiving a compound, comminuted fracture of the skull over the right temporoparietal region. He was treated surgically, a section of the bone being removed, and when he returned home, a few weeks later, he was apparently free from all symptoms. A few months later he began to attend school, and ultimately became a bookkeeper. At the age of twenty-one, fifteen years after his injury, he began to exhibit epileptic convulsions. The attacks were at first infrequent, and always began with a convulsive movement of the left hand, gradually becoming general. For five years he averaged about one attack a month, but they gradually became more frequent and severe, and when Doctor Leszynsky first saw the patient, nearly four years ago, he had recently had four severe attacks in a single night. Upon examining the cranium, the presence of adhesions over the site of the old wound was suspected, and an early operation was recommended, and this was done by Dr. Henry Roth at the Lebanon Hospital on May 23, 1910. It was then found that the skull, the dura and pia mater and the cortex were matted together in one mass. After some difficulty the cortex was freed and covered with a piece of Cargile membrane and the wound was then closed. The patient's operative recovery was good, and he left the hospital shortly afterwards. Three years and eight months had elapsed since the operation and the man had never had an epileptic convulsion since that time. His treatment had been purely hygienic, and he had never received any sedative drugs.

How to Determine Whether Children Are Normal.—Cimbal states that conscious inhibition of impulses, etc., occur earlier in the healthy subject in comparison with psychopaths and mild debiles, for the self-evident reason that this inhibition represents the acme of cerebral development. This want of the quality under consideration is common alike to the imbecile and to certain intellectually normal children. Intellectual tests are regarded by the author as no longer a sufficient test for a normal mind and in any case they are scientific in character, rather than practical. The author prefers to test the imagination of the child. Apparent obstinacy is thereby found at times to be due to intellectual torpor. A purely intellectual test for imbeciles, like the memory, may show that the latter is suspiciously good. Some of the newer psychological tests for the workings of the mind—for the rapidity of impressions and degree of attentiveness—work out as well in psychopaths and debiles (and sometimes in out-and-out imbeciles), as in children of normal minds. In regard to motor tests a normal child under three years cannot control his muscular activities. After that period the normal subject begins to acquire this control, but for the psychopath years may be necessitated, and indeed, a lifetime may be insufficient. Sweating and tremor on undressing, redness of the skin after slight irritation. Notably increased sensitiveness of the genitals suggest masturbation. Spasmophilia is regarded by some as indicating a psychopathic constitution. We never expect to see any coherent disease picture in these children save in dementia precox and epilepsy. A general word like "debility" must be employed to designate the kaleidoscopic pictures which we encounter. Having decided whether a child is a "debile" the next and more difficult question to answer concerns the amount of restraint indicated. Cases must be individualized; some do best at home. Ties and bad habits may disappear under isolation.—N. Y. Medical Journal.

Medical versus Surgical Treatment of Pyloric Stenosis in Infancy.—L. E. Holt (Jl. A. M. A. (Medical Record), contends that our decision as to operation or medical treatment must depend largely on the severity of the symptoms and the conditions under which the child is seen. To subject every infant with pyloric stenosis to laparotomy for a condition in which, at a low estimate, fifty per cent recover without it, seems hardly justifiable. A patient in private practice under conditions which make the best medical treatment possible may not, in most cases, need operation; but in hospital practice, in cases seen late, with acute symptoms, immediate resort to surgery offers a better chance of recovery. To persist with medical treatment, when forcible vomiting and marked peristalsis are either continually present or recurring, seems to him to have far greater risks than operation has. Medical treatment consists in careful feeding and stomach washing. Gastric lavage should be practiced twice a day, with water at a temperature of not less than 112 degrees F. Breast milk is the best food, but one not rich in fat is essential. A modified milk mixture may be employed. From one to three ounces, at three or four hour intervals, are advisable; water in small quantities being given between feedings. Some infants, however, seem to do better on much smaller quantities, one half ounce every hour, especially if the food is breast milk. In greatly prostrated patients, hypodermoclysis may be used twice a day, as in postoperative treatment. Rectal feeding is of but little assistance, except for a very short time, and drugs and the local application of heat are, in his opinion, of little or no value. The bowels are moved readily by an enema. Aspiration of the stomach to determine the degree and rate of emptying is of much assistance in deciding the frequency with which these children should be fed and the amount of food to be given at one time.

Pyloric Obstruction in Infants.—W. A. Downs reports these cases, seven of which proved fatal. His conclusions are: 1. Hypertropic pyloric stenosis is congenital to the extent that there is an increase in the thickness of the circular muscle fibres at the pylorus; so that the stomach, in order to empty itself, contracts more forclbly than normal. The result of this, from its effect on the mucous membrane of the part, is a valvular action which gradually produces complete closure of the pylorus. 2. There is sufficient time, between the onset of symptoms and appearance of signs of complete obstruction, for careful observation and the carrying out of any medical measures likely to prove of benefit. 3. Babies coming to operation in good condition suffer little or no shock; their convalescence is regular, and they are soon restored to normal health.

Criminal Tendencies and Mental Defects in Childhood.—Raecke (Med. Klin., January 18, 1914) has pointed out that amongst the children in reformatories and similar institutions mental defects and abnormalities are much more frequent than among children in other institutions. In Frankfort during the last two years Dr. Raecke has carefully and systematically investigated 371 children and youths of this class. Of these, 292 (up to 16 years of age) had already shown criminal tendencies, 175 (or about three-fifths) had been guilty of offenses against property. This corresponds with the usual experience that stealing is the most frequent crime amongst children. The next largest section were those who exhibited sexual deviations from the normal. No less than 52 (or nearly one-fifth) were in this class. Amongst the offenses against property were 23 cases of burglary and 26 instances in which boys had formed societies or bands for burglarious purposes. Some of these were highly organized and had names evidently borrowed from the lurid fiction so plentifully and cheaply provided for this class of youth. They were led by a "captain," elected by themselves, and sometimes took an initiatory oath written in their own blood. In this class the cause is frequently to be found in desire fostered by undesirable reading, picture theatres, etc., rather than in any real dishonesty. The mental conditions found are very interesting. In only one-fourth of the cases were these normal and the crime the result of circumstances and upbringing. In nearly half of the cases there was an intellectual defect of higher or lower degree. Actual imbecility occurred in 82 cases. In this matter the method of Binet-Simon proved very useful. There were 22 cases of epilepsy, distinct hysteria in 16 cases, and various psychopathic symptoms in 58 cases. Amongst the last mentioned were included only those without accompanying intellectual defect. When that was present the case was classed amongst imbeciles. Actual insanity was rare. It was suspected in 8 cases; in only 4 could the diagnosis be definitely made. The author points out the harmful influence which the sexual cases frequently exercise over their playmates and the undesirability of allowing them to mix freely with other children.

Vulvovaginitis in Children.—This affection is coming to be recognized as a formidable malady. Institutional epidemics occur frequently and it is prevalent among little school girls everywhere. In the vast majority the condition is a gonococcic infection, although a few cases are due to a catarrhal state depending upon the presence of thread worms or on the debilitated condition of scrofulous or tuberculous children. Taussig believes that the most frequent means of infection is from child to child, through the school lavatory. In institutions the hand of the nurse and the bath may at times be responsible. He does not think that transmission is common through cloths. Barnett applies Lugol's solution to the cervix and vaginal walls through the Kelly endoscope. This is done three times a week, and one to 10,000 permanganate douches given daily by the mother after suitable instruction. A soft rubber catheter is used for this purpose, introduced as far as possible. Taussig employs two and even four per cent silver nitrate solutions, injections being made with the ordinary small rubber tipped urethral syringe. The most important thing in the way of prophylaxis is the adoption in the water closet of a U shaped seat, with low bowl. In this disease an ounce of prevention is worth many pounds of cure.—New York Med. Jour., Oct. 10, 1914.

Respiratory Infections in Infants' Wards.—Speaking of the frequency and after fatal results of respiratory infections in infants' wards, W. F. Chappell and A. Brown (Amer. Jour. Dis. Child., 1914, vii, 380) say that it is the pneumococcus and streptococcus infections that cause most of the trouble. None of the measures of respiratory prophylaxis previously proposed have so far met with success. The writers have attempted to prevent respiratory ward infections by (1) increasing the child's individual resistance by careful attention to its nutrition; (2) by careful nursing for the purpose of minimizing the danger of transmitting infection, almost an impossibility where nurse-maids do the greater part of the handling of patients; (3) by the direct prevention of the respiratory infections by postnasal douching with warm antiseptic solutions, chiefly boric acid, followed by argyrol solutions of various strengths. The cleansing of the naso-pharynx of all mucous and food-remains, which form a good culture medium for the development of the various organisms, seems very desirable as a preventive measure in these cases. The openings at the tip of the syringe used by the writers are arranged so that the fluid is directed upward, forward and backward, but not laterally, thus minimizing the risk of the entrance of fluid into the Eustachian tubes. The infant is wrapped tightly in a sheet and held in a sitting posture on the lap of a nurse. While depressing the tongue the syringe is carefully introduced behind the soft palate in such manner that the tip is held free in the postnasal space; the contents are then quickly discharged, the solution pouring out of both nostrils, mingled with curds and mucus. As soon as the contents of the syringe have been evacuated, the nurse quickly throws the infant's head forward, in this manner facilitating the expulsion of mucus, etc. The chief objection urged against postnasal douching is the possibility of the introduction of fluid into the Eustachian tubes; but only four cases of otitis developed in the trial ward, while eleven developed in the corresponding ward where postnasal douching was not done. During the six months of observation the writers used first a 1 per cent boracic acid solution, followed immediately by a 1 per cent argyrol solution; more recently, undiluted hydrogen peroxid, followed by a solution composed of three-quarters normal saline and one-quarter Seiler's solution, with results that have appeared better than were obtained with the milder solutions.—(A. J. of D. W. & C.)

Mechanism of Immunization.—By H. S. Williams and J. W. Beveridge (American Medicine, Oct.-Nov., 1914). The main thesis of this dissertation is: The mechanism which gives the human organism partial or complete immunity to bacterial disease comprises what may be called the cytogenic system, including as its active agents the lymphatics, bone marrow, and spleen, with its daughter cells, the white and red corpuscles, and the liver as the excretory organ of the waste products incident to the immunizing process. The theory assumes that the entire cellular system of the organism, viscera, muscles, and brain, may be considered as a secondary apparatus, standing as it were in the background, ready to supplement the work of the chief immunizing agents. So general an implication as the latter may seem to savor of the nature of a truism, but it is the aim to show that the theory ascribes a specific and definite part in the immunizing process to the body cells; the attempt being made to trace the precise causes of their activity. Equally specific is the interpretation of the activities of the white and red corpuscles, which are postulated as the chief and controlling mechanism in the process of immunization. This hypothesis of immunization might, appropriately enough, be termed the cytoplastic theory were it not that this term seems too general and not sufficiently explanatory. On the whole, the term proteomorphic theory is the most comprehensive and explicable one which suggests itself, inasmuch as the theory, at all stages and in its widest implications, has to do with the metamorphosis (mainly hydrolytic) of protein compounds.

A New Test for Beginning Peritonitis in Children.—Drachter (Munch. Med. Wochenscher.): Palpation of the abdomen often gives confusing results in children, as they may complain of pain in the absence of peritonitis and the reverse. The writer has found the following test useful: The patient lies on his back with the legs extended. The right leg is raised by grasping the foot with the left hand. With the right fist, the sole of the foot is struck a light but somewhat pushing blow. A minimal impulse is transmitted to the parietal peritoneum, causing it to rub against the visceral peritoneum. In the presence of appendicitis, the little patient usually complains of pain in the abdomen, a region to which his attention has not been directed. In an otherwise suspicious case, a positive outcome of the test confirms the diagnosis of peritonitis; a negative outcome, however, does not necessarily speak against its presence.—(Interstate Medical Jour.)

Salvarsan in Scarlet Fever.—F. Glaser (Deutch. med. Wchnschr., 1914, xl, 1760) reports the results of salvarsan used in the treatment of 42 cases of scarlet fever. The use of salvarsan is justified in this disease by three factors: The positive Wasserman reaction occurring at the height of the disease in many cases, the beneficent effects of the drug on severe necrotic inflammations of the throat, and lastly the therapeutic effect of salvarsan on a large number of protozoal diseases, such as malaria, frambesia, etc., to which class scarlet fever may possibly belong. Lenzmann and Klemperer have claimed excellent results from this treatment and note reduction in temperature from 1 degree to 2 degrees C. with marked general improvement and local improvement of the throat and lymphatics. Torey warns against large doses which cause catarrh, collapse, and nephritis, but admits the temperature is reduced and that general improvement is marked by this treatment. Jochmann, in 117 cases, claims the same good results, especially the necrotic sore throat, but claims the subsequent complications are not prevented by the salvarsan. Chill, vomiting and diarrhea are mentioned by all these observers as occurring in over half of the cases. The methods used were intravenous and subcutaneous as in Glaser's 42 cases. In the latter 0.1 gram salvarsan was used for every 10kg. of body weight. Three septic cases practically moribund, were not affected by the salvarsan. Out of 15 cases with doubtful prognosis two died. In half these cases the effect on the temperature was marked, and the membrane in the throat was influenced favorably. The good effect on the ulcerative processes was unmistakable, but chills, vomiting and diarrhea were frequent and tended to lower the patient's strength. Complications, such as otitis media, glandular enlargement, and nephritis were not warded off in this group, by the treatment. In the last group of 24 cases, with an absolutely good prognosis, the injection of salvarsan caused a critical fall of temperature in over half of the cases. The chill, vomiting, and diarrhea accompanying many of the injections passed off in a few hours. The treatment apparently had no effect on the eruption, the desquamation process or the complications. The conclusions reached from this series of cases were that salvarsan, in many cases, clears up the diphtheroid sore throat in scarlet fever, and affects favorably the general condition, especially reducing the temperature. It has no effect in the toxic cases nor in complications. In over half the cases, one injection caused chills, vomiting and diarrhea.—A. T. of M. D.

Treatment for Prolapsus Ani in Young Children by William Gemmill.—(Lancet, Dec. 19, 1914). During the act of defecation the position assumed is such that the intraabdominal capacity is reduced, the pressure increased by muscular action, the anus is made to lie on a free surface without the support of the buttocks, the support given by the muscles of the perineum and pelvic floor is reduced to a minimum, and the external sphincter is put on the stretch. These several factors all combine to make the mechanical retention of a prolapsing rectal mucosa almost impossible, even with the aid of strapping together of the buttocks. A method, however, which opposes each of the mechanical factors consists in the application to the back of the child a long flat splint which runs from the root of the neck to the feet. This splint should be made in two pieces, an upper and a lower of wood, joined in the region of the buttocks by means of an iron ring small enough to support the buttocks, but of sufficient aperture to permit defecation and the toilet of the child. After a brief period the child becomes accustomed to the splint and its use for several months leads to the recovery of the tone of the affected parts so that even severe cases of prolapse undergo complete cure.

Eczema and Neurodermitis in Childhood.—Lechnert states (Berliner klinische Wochenschrift) that Vidal was the first to separate neurodermitis from the eczemas. He termed the condition chronic circumscribed lichen because clinically it was a lichen and as such had been described by older authorities. Ie began as circumscribed papules which itched intensely, and which tended to consolidate to form placques. Apparently there was no exogenous causation, and, since it occurred in neuropathic subjects and the itching was apparently subjective the affection was later christened circumscribed chronic neurodermitis. Close study revealed special clinical and histological peculiarities, so that henceforth confusion with eczema or any other dermatosis seemed impossible. Its nearest congener appeared to be prurigo from which, however, it should readily be distinguished, Neisser was nevertheless disposed to replace the affection within the eczemas of which it constituted a sharply individualized form. Continued observation showed that it could occur in the mucosae which were continuous with the skin, as the lips, conjunctivae, genital mucosae, also that it sometimes located itself on the palms and soles causing verrucoid lesions. It even appeared as a moniliform dermatosis, like lichen planus—mere strips or single rows of papules. Of late years its presence has often been noted in children, even in scrofulous children. Differential diagnosis is the more difficult because eczema and neurodermitis readily develop in the same child. In the past two years nearly 300 children have been treated at the local clinic (Frankfurt a. M.) for one or the other affection or a possible association of the two. The proportion of eczema to neurodermitis was about 3 to 1. In 12 cases a diagnosis was impossible. In the undoubted cases of neurodermitis a neurotic substratum was by no means always in evidence. On the other hand a scrofulous component was often noticeable. The order of evolution in children agreed with that seen in adults; a primary, subjective itching, very violent and appearing in crises; the characteristic papules which form placques; the increasing resemblance to a lichen; and chronicity. Tarry preparations are much used in treatment.

The Significance of Doehle's Inclusion Bodies in the Diagnosis of Scarlet Fever.—R. Isenshmid and W. Schemensky (Munch. Med. Wchnschr., 1914, lxi, 1997), in reviewing the work done by various investigators on the inclusion bodies of Doehle, states that in general most authors incline to impart more or less of a diagnostic value to these bodies. Only a very few regard them as the specific cause of scerlet fever. While found within the polynuclear leukocytes in the early days of practically every case of scarlet fever, yet authorities are unanimous in stating that they also occur in other diseases, namely the infectious type. In the authors' investigation two stains were used, carbol methyl-green of Pappenheim, and the borax methylene-blue of Mason. Eighty cases of typical scarlet fever were investigated, the inclusion bodies being found in every one. While the bodies occur in many different forms, the authors found the long, triangular form with the long tail-like end to be more characteristic of scarlet fever than the other forms. So also are the bodies arranged like diplococci. The authors admit that these bodies are of diagnostic importance when they are not to be found in the blood but that during the early hours or days of the illness Doehle's bodies are often missing. The characteristic bodies were found in four out of five cases of croupous pneumonia. In diphtheria diagnosis Doehle's bodies are of value only when absent, showing that scarlet fever is not developing, or when found in great numbers when the case is more probably scarlet fever than diphtheric. The bodies were not found in cases of rotlen, measles, and pertussis. The absence of Doehle's bodies in a febrile attack rules out fresh scarlet fever. The presence of Doehle's bodies excludes rotlen and makes measles an unlikely possibility.—A. J. of M. S.

Infantile Diarrhea in Brisbane.—Thelander (Australian Medical Gazette) says that the treatment of epidemic infantile diarrhea in Brisbane, the so-called "gastritis," gastro-enteritis, or summer diarrhea of infants, the Doctor regards as diagnostic features the arrest of the digestive functions and the appearance of the typical green stools with their characteristic odor. The writer has treated over four hundred cases, ranging in age from eight days to seven years. Of the cases treated by him from the beginning, only two died; in one of these cases intussusception developed and in the other a relapse occurred.

The most characteristic feature in the gastro-intestinal condition is the stool. There is often costiveness at first, in which case the child is almost invariably feverish, and the first stools are not usually green, but whitish, or very pale yellow. This is so frequently the case that any child who has passed an unusually pale motion, and is out of sorts, but not jaundiced, should for safety be treated as gastro-enteritis, no matter what symptoms preponderate. After the pale motions, often loaded with white curds, and generally of a characteristic mawkish fetor, come the typical green mucous stools, with some curds; pale or green mucous, and traces of blood or pus in variable pro portions. The disease should be well under treatment by this time. The temperature has gone up to 103 deg. F., and in one case to 106 deg. F.

He has evolved a definite system of treatment. He never uses gastric lavage, neither enemas. The latter were used at one time with discouraging results, and the former did not appear to be rational treatment. The first instruction is to stop all food, and to give water very copiously. It is useful to give albumen water or barley water; besides, it pleases the anxious mother. A little salt should be added to the albumen water,· for it makes the child drink better. When a child is in a very low condition, repeated drinks of warm water are as good a stimulant as is required for a few hours; thereafter, liquid peptonoids may be given.

The first medication is, as a rule, calomel, one or two grains every hour or two until six doses are given. If costiveness be marked, however, an initial dose of castor oil is useful, followed by calomel. In the early morning sulphate of magnesia is given in doses of from 20 to 30 grains, adding a little salol, or menthol and glycerin. Menthol seems to be better when there is any tendency to vomiting. If the vomited matters be very acid, carbonate of magnesia (5 to 15 grains) is useful . Diluted sulphuric acid or hydrochloric acid is often of service.

Nutrition must not be overlooked; a large amount of water should be given. Next day, one or two doses of calomel are given, and sulphate of magnesia the next morning. It is rarely necessary to continue this treatment more than four days.

The action of the magnesia-sulphat seems to be three-fold: purgative, mildly antiseptic and precipitant. The toxic albumoses or albuminoid substances generated in the intestines are precipitated by the metallic sulphat, and their absorption thus hindered, and to this action is probably to be attributed the fact that even very collapsed infants stand the drastic medication very well. The stools soon lose their fetor, and, as a rule, the yellow color returns on the third day. The magnesia is given four or five times a day until the stools are yellow again. No milk or milk products are given until the stools are yellow.—(Charlotte Medical Journal.)

No Isolation for Measles and Scarlet Fever.—Marie Nageotte-Wilbouchewitch (Presse med., June 13, 1914) inveighs against the present regulations which compel isolation of children affected by scarlet fever, measles, chicken-pox, and other infectious diseases of children. These regulations often result in great hardships for both parents and children, yet they do not prevent the spread of these diseases, epidemics of which occur every year. She advocates the use of the method of Milne for rendering these diseases harmless and preventing their spread. The method consists in beginning to disinfect the throats of children even before the diagnosis is made, with solution of phenol in olive oil swabbed on the throat every two hours for twenty-four hours. In scarlet fever this is sufficient, but in measles it should be continued three days. Phenol thus employed is not irritating, but anesthetic, and makes swallowing easier. The mouth and teeth are also disinfected. The skin is oiled with essence of eucalyptus all over the surface of the body, night and morning, for four days, then once a day for ten days. During the period of coughing in measles a sort of hoop is placed around the head from which is suspended a thin veil of gauze wet with eucalyptus. The sickness becomes benignant and complications of the throat and respiratory organs infrequent. Sick and well may occupy the same bedrooms: the duration is lessened and the disease is over at the end of ten days. Contagion is absolutely suppressed. The patient lives in an atmosphere of eucalyptus. All isolation is unnecessary; the patient remains with his family and returns to school at an early date. All the clothing and bedding are rendered innocuous and need not be disinfected after the sickness is over. Milne has tried this method in homes where many children were congregated with the result that epidemics ceased to spread there. The author thinks that there are great advantages in the adoption of this method of treatment instead of the senseless and ineffective method at present used.—(A. J. o' D. W. & C.)

Chronic Pulmonary Tuberculosis in Infancy and Childhood.—Lees (The British Medical Journal) describes six areas of dullness over the apices of the upper and lower lobes which he regards as typical of pulmonary involvement. Dullness in these regions is equally typical and constant in infancy, childhood, and adult life, but it is only to be made out by the most painstaking and accurate percussion. Percussion should always be made with the patient in such a position as permits of full muscular relaxation; for the anterior chest the patient should be lying supine, while for the posterior he should be seated with his arms crossed and resting upon his knees. The percussion should be as light as possible, and constitutes the most certain and valuable sign of pulmonary tuberculosis in infants and children, in whom there is no sputum, and who usually show none of the ordinary symptoms of tuberculous pulmonary disease. Valuable aid is rendered by properly taken X-ray photographs, which show small areas of impaired light transmission in the regions found to be dull, as well as fine lines of infiltration radiating from the hilus of the lung. But the X-ray photograph is not delicate enough to detect changes in the lungs at the very earliest time, when careful percussion will reveal dullness in one or more of the areas in which it is typical of tuberculosis. The finding of this dullness in the presence of bronchitis, or of the pulmonary affections associated with many of the infectious diseases should be regarded as an almost positive indication of tuberculous involvement.

Chronic Tuberculosis in Childhood.—Riviere (British Medical Journal) says that chronic pulmonary tuberculosis in infancy or childhood is nothing more than a curiosity, but he agrees with the preceding author that the best method for its early diagnosis lies in the demonstration of the typical dull areas by exceedingly light percussion. He holds the common thoracic lesion in tuberculosis of infancy and childhood to be an involvement of the tracheobronchial lymph glands. Diagnosis of this lesion rests upon the demonstration of interscapular dullness and presence of a shadow in radiographs. Riviere's experience leads him to the conclusion that, irrespective of whether this glandular involvement is right or left sided, or both, the area of dullness is to be found on the right side only. This is explained by the fact that it is believed to be due, not to the presence of the enlarge glands directly, but to a deficient aeration of the lung tissue from pressure of the glands on the right pulmonary artery which leads to congestion of the lungs. The typical area of dullness extends from the first to the sixth, seventh, or even to the eighth dorsal vertebra and outward convexly from the middle line for from two to three inches. In these cases there may also occasionally be found some of the typical areas of dullness described by Lees as indicative of pulmonary involvement, but the characteristic feature, even when these are present, is total absence of changes in the respiratory sounds and of rales. The interscapular dull area, indicative of glandular involvement, shows a certain amount of variation in size in the different phases of respiration.

Acute Bacillus Coli Infection of the Urinary Tract in Children.—R. G. Gordon (Brit. Jour. Child. Dis., 1914, xi, 252) divides these cases into five types: (1) Those cases in which there are only general symptoms. Such symptoms occur somewhat as follows: A sudden onset of the illness associated with rigors or with convulsions, or blueness and collapse. After the onset the temperature rises quickly to 105 or 106 F., and if untreated will continue to swing with large variations, often falling or rising 6 to 8 degrees in a few hours. Sometimes the chart simulates that of typhoid or even malaria, with regular intermissions, but the child is not so ill as the severe fever would seem to indicate, and directly the temperature falls the child is ready to play. The pulse and respirations are usually quickened with the rise of temperature, but are not excessively rapid. The child is pale and drawn, though there may be a flush during pyrexial periods; he is irritable and restless, and he may have marked muscular tenderness. There may be no physical signs, and so nothing to draw attention to the urine. (2) Cerebral cases. These often simulate intraranial disease, especially meningitis, and suffer from delirium, or may be somnolent or even comatose when seen. The onset is often marked by convulsions and there may be rigidity of the neck, strabismus, and rarely Kernig's sign. The extreme irritability and screaming attacks which are often present lend additional weight to the diagnosis of meningitis. (3) Pulmonary cases. Some cases present symptoms suggestive of the onset of pneumonia, having marked tachypnea accompanying the high fever and malaise. As a rule respiratory distress is absent, though cases do occur in which there is some expiratory difficulty. Physical signs are absent, though a slight congestion with impairment of note and occasional rales may still further confuse the issue. Such cases do not follow the usual course of a pneumonia, and, what may be taken for the signs of an early consolidation, do not develop. (4) Abdominal cases. The onset in these may be attended by severe colicky pains in the abdomen ascribed by Porter and Fleischner to ulceration of the ureters. There are vomiting and obstinate constipation, or in some cases diarrhea. The appetite is lost early and in a few cases jaundice is seen. With treatment of the urinary condition, the abdominal symptoms disappear. (5) Urinary cases. In these there is often severe pain in the kidney region, usually the right, and the organ itself may be enlarged and palpable, while its size may vary from time to time, as in hydronephrosis. If the kidney substance is involved there may be edema of the face, hands and feet. The bladder symptoms are usually referable to the hyperacidity of the urine, and consist of enuresis, frequently of micturition, straining and pain during the act. Such bladder symptoms, if untreated, may die down for a day or two to reappear again with increased violence. All these various symptoms are doubtless results of the circulation of the toxins produced by the bacilli, and it is noticeable that in most cases they disappear after treatment by alkalies.—(A. J. of O. & D. W. & C.)

A Contribution to the Pathology of Epidemic Poliomyelitis.—By Simon Flexner, M.D., Paul F. Clark, Ph.D., and Harold L. Amoss, M.D. (Journal of Experimental Medicine, Vol. xix, No. 2, 1914). Epidemic poliomyelitis is a general disease affecting mainly the nervous system. Apparently the virus is not stored in the peripheral nerves, but seeks the parenchymatous nervous organs in which to multiply. The virus has been demonstrated by inoculation tests, not only in the spinal cord, but in the brain and in the intervertebral, Gasserian, and abdominal sympathetic ganglia.

All the ganglia show histological lesions, more or less severe, similar to those of the spinal cord and brain. The severest occur in the intravertebral ganglia, those next in severity in the Gasserian while the mildest appear in the abdominal sympathetic ganglia. The interstitial lesions predominate over the parenchymatous, and in preparalytic stages the intervertebral ganglia show interstitial lesions, especially pronounced at the pial covering.

The virus of poliomyelitis is highly resistant to glycerin, in which it survives for more than two years; to 0.5 per cent phenol, in which it survives for more than one year; while it succumbs after having been kept frozen constantly for several months.

It is unsafe to employ phenol to modify the virus of poliomyelitis for the purpose of active immunization.

The cerebro-spinal fluids of convalescents tend to be devoid of the neutralising principles for the virus of poliomyelitis, although they may exceptionally be present within this fluid.—J. P. Kinloch.

The Hard Lot of the First-Born.—Since the days of Esau and Jacob, if not earlier, the younger son has not uncommonly felt some degree of envy for his elder, and as he thought, more fortunate brother. For the eldest there has been the easy lot, the soft place; for the younger the hardship, and the struggle with the world. Professor Karl Pearson, however, comes now to show us that the first-born is truly the unfortunate one of the family, for on him, by virtue of his very precedence, falls an undue share of whatever infirmity or defect may be inherent in the family. He is the heir of the family ills, as well as the goods. In a recent lecture, Professor Pearson points out that the limited families of today render the condition of the first-born of special importance to the community. There is, it is shown by statistics, a double proportion of still-births among first-births—40 per 1,000, as against 20 per 1,000 for second births. Measurements of new-born children showed that first-born were both the lightest and shortest at birth. Riffel, in Germany, found an undue preponderance of tuberculosis among eldest children, and Dr. Heron found the eldest child more often insane than other members of the family. Sir Arthur Mitchell in 1855 showed the same point as regards idiocy, and Dr. Goring recently demonstrated an excess of criminality among first-born. Such a defect as albanism is said also chiefly to affect the eldest. Truly, those of us who used to think we were unfortunate in being younger sons must now congratulate ourselves.—Medical Press and Circular.

Hypertrophic Stenosis of the Pylorus.—By L. Exchaquet (Revue Medicale de la Suisse Romande). Of the five cases reported in this paper, four presented quite typical symptoms. In the fifth, however, vomiting had ceased at the time the child was first observed, and the chief manifestation was a marked anasarca, which the moderate cardiac weakness failed to account for. The causes of the edema proved to be the barley flour, five grams, with Vichy water, 100 grams, which had previously been given as a remedial diet, both these articles actually favoring edema, and also a retention of chlorides in the system, as shown by the scantiness of the urinary output. Discussing the treatment in hypertrophic stenosis of the pylorus, Exchaquet deals particularly with the indications for operative intervention. The rapidly with which emaciation occurs is an important feature. In breast fed children of families in good circumstances, seen at the outset of the pyloric disturbance, and in whose cases careful hygienic management is possible, medical treatment is advised, and it should be persisted in unless a pronounced loss in weight takes place in the few days following, when operative treatment should be favored. In poor, including hospital patients, however, prolonged medical treatment is much less easily borne, and surgical treatment should be urged after only twenty-four to forty-eight hours of medical management if the weight falls rapidly, and after eight or ten days, if the condition becomes only gradually worse. In breast fed children, Exchaquet advises that the medical treatment, if used, be that outlined by Heubner. The child is allowed to nurse ad libitum, disregarding the subsequent vomiting; warm compresses are placed over the epigastrium and a little opium or atropine is given by rectum to quiet peristalsis. In children for whom artificial feeding is alone practicable, he recommends the measures used by Ibrahim. The child is given in fractional amounts rich but easily digested milk preparations, e.g., milk to which malt flour, buttermilk, or sugar has been added. Gastric lavage is instituted to remove residual food, and the spasmodic factor in the pyloric obstruction allayed with warm compresses, valerian, opium, papaverine and atropine. The general condition is supported by means of saline enteroclysis or hypodermoclysis and nutritive enemas, and where possible, the pylorus mechanically dilated by Hess's procedure.

Intramuscular Injections of Antitoxin in the Treatment of Diphtheria.—J. D. Rolleston and C. Macleod (Brit. Jour. Child. Dis., 1914, xi, 289) say that, judging from the literature, the practice of intramuscular injections of diphtheria antitoxin has been confined to German speaking countries. Their paper is based on six months experience with this method at the Grove Hospital. In all, 412 injections were given to 399 patients. Subtracting from these 33 still under treatment and 45 found not to have diphtheria, 261 cases of diphtheria received 324 injections. Fifteen died, a mortality of 5.7 per cent, which would be reduced to 4.6 per cent by excluding 3 cases which died within 24 hours after admission. The severe faucial cases received from 16,000 to 20,000 units on admission, usually the same, but sometimes a smaller dose, being repeated if necessary on one or two of the following days. The moderate faucial cases received from 8,000 to 12,000 units on admission, the same dose being occasionally repeated on the following day. The mild faucial cases received from 4,000 to 8,000 units, and it was rarely found necessary to repeat the dose. The cases of nasal, laryngeal, conjunctival or aural diphtheria in whom there was no faucial involvement, and consequently little if any toxemia, received from 4,000 to 12,000 units. The total amount of antitoxin given in each case. Intramuscular injection, preferably in the vastus externus, deserves to supersede all other methods of administration of antitoxin in the treatment of diphtheria for the following reasons: It is quite as simple as the subcutaneous method, ensures much more rapid absorption, is less painful, and less liable to give rise to abscesses at the injection site. It is superior to the intravenous method, not only in the greater simplicity of its technique, but also in the less rapid excretion of antitoxin after injection. The more rapid absorption of antitoxin by the intramuscular route is shown, not by the effect on the faucial or laryngeal process, but by the lesser incidence of paralysis, especially of a severe kind.—A. J. of O. & D. W. & C.

Circumcision in the Masturbation of Female Infants, Rowland G. Freeman, New York, (American Journal of Diseases of Children, August, 1914).—The author believes that not enough attention has been paid to masturbation in female infants. The condition is usually due to an adherent clitoris, which is often completely buried in the prepuce. The simple breaking up of the adhesions is very painful and often leads to no result since the adhesions reform in a short time. The author, therefore, advocates a complete removal of the foreskin of the clitoris and cites cases in which this operation has been of lasting benefit.

BOOK REVIEWS

The Heart in Early Life.—By G. A. Southerland, M.D., F.R.C.P., Senior Physician to the Hampstead and North West London Hospital, Physician to Paddington Green Children's Hospital, New York. Oxford University Press, 33 West 34th Street, New York City. Cloth, price $2.00.

This work is in no wise intended as a systemic text book, nor does it contain any instructions for, or relation to, the examination of sick children. The author has attempted to make it of service to the young practitioner, furnishing him with information which may have been neglected during his medical course. It deals directly with clinical problems of cardiac disturbances and diseases during childhood and youth as they present themselves in the ordinary routine of practice.

The author wisely takes advantage of the more recent teachings on cardiology and of instrumental methods in the determination of facts and of the elucidation of disputed points and problems. He also believes that in the past the profession has treated too seriously the subject of functional heart disorders, and has given too little attention to disease of the heart in its earlier stages. The work as a whole is very commendable, and well worth careful study.

Food Products.—By Henry C. Sherman, Ph.D., Professor of Food Chemistry, Columbia University. New York: The Macmillan Company, 1914. Cloth, $2.25.

"This volume aims to combine a general study of foods with the results of recent advances in food legislation and the scientific investigation of certain important aspects of the composition and value of food. A chapter is devoted to each important type of food, its production, preparation, economic importance, proximate composition, inspection, standard of purity, digestibility, nutritive value, and place in the dietary. At the close of each chapter is a bibliography of appropriate references. Five appendices contain respectively the federal rules and regulations for the enforcement of the food and drugs act, a series of food inspection decisions, the methods and standards adopted by the American Association of Medical Milk Commissions for the production and distribution of certified milk, the federal meat inspection law and regulations of the bureau of animal industry of the United States Department of Agriculture, and an alphabetic table of 100-calorie portions of the principal food materials. The work is adequately illustrated with 36 figures in the text. This book should prove of value and assistance to teachers, students and intelligent practitioners of domestic science."

Selected Addresses on Subjects of Education, Travel, Biography, Etc., by James Tyson, M.D., LL.D., Professor of Medicine Emeritus, University of Pennsylvania. Cloth bindings, $1.75 net. P. Blakiston's Son & Company, Philadelphia, Pa.

The contents of this volume comprise the addresses delivered by Professor Tyson on various occasions since 1884, viz: Requirements of a modern college education, three short addresses in '91, '92, and '93; The office of the college and duty of the graduate; Some considerations preliminary to the study of medicine; Valedictory address to the graduating class in medicine and dentistry, University of Pennsylvania; The general practitioner; Hospital organization; The trained nurse; Memoir of Albert Holmes Smith, M.D.; Memoir of William Pepper, M.D.; Address of presentation of portrait of Dr. William W. Gerhard to the College of Physicians and Surgeons; Response to the toast of our "Foreign Guest," at the annual dinner of the British

Medical Association at its meeting in Portsmouth, England, August, 1899; Physicians holiday at Karlsbad; Physicians holiday at Vichy; Physicians holiday in the Engadine; Address of the President on the dedication of the new hall of the College of Physicians and Surgeons of Philadelphia; Review of the progress of medicine during the last half century.

The Medical Pickwick is the title of a new journal for medical readers, yet not a medical journal, the first number of which bears the date, January, 1915. The magazine is published at Saranac Lake, N. Y., and Dr. Walter M. Brickner is the editor, which fact is a guarantee that the journal will not be lacking in humor. But the aim of the publication is not alone to be humorous, it is to be entertaining as well, to treat of all matters, except scientific, relating to medicine. The first number contains a foreword by Fielding H. Garrison, "The Singer in the Snows" (referring to Stevenson's life at Saranac), by Stephen Chalmers; "The Brownings," by J. Louis Ransoshoff; "Isle de Blackwell," by John B. Huber; "Modern Medical Writers," by Davina Waterson; "The Author's Complaint," by Walter M. Brickner; "The Pickwick Medical Society," by Ira S. Wile; "The Medical Pickwick," by Samuel W. Kelley; "An Old English Sign-board," by Eli Moschcowitz; "Nut Raising for Doctors," by Robert T. Morris; "Two War Poems," by Henry C. Coe; "To Johannes Brahms in Vienna," by Theodore Billroth; "Therapeutics of Two Hundred Years Ago," by Alice Chadwick; "Incubation at the Temple of Epidaurus," by Lucille Kohn; "Julius Pagel," by Major C. Seelig; unsigned articles on "The Man Himself, Abraham Jacobi," "Original Account of Mountain Sickness," "The Surgeon in the Field Hospital," "William Hunter."

PEDIATRICS

VOL. XXVII FEBRUARY, 1915 No. 2

EDITORIAL

CONSTIPATION IN INFANTS

Constipation in infants is not only a present danger but a menace for the future. It is injuriously prejudicial to the health of the infant, and the establishment of a habit of constipation augurs badly for the health of the child in the years to come. While the causes of constipation are almost the same as those of adults, in the case of older individuals, however, the questions of volition and determination enter into the situation. For the reasons that will-power plays no part so far as infants are concerned, renders its treatment more difficult and its recurrence more likely. According to Pritchard nearly all cases of constipation can be referred to interference with the mechanical locomotion of feces through the colon and sigmoid or to dislocation of the sensitive reflex of the rectum.

Constipation is not infrequently the result of the neglect of properly training infants to evacuate regularly. Sometimes it occurs as the outcome of the administration of purgative doses of castor oil, that clears out the meconium which is designed to lubricate the mucous surface, and to offer a convenient medium to the peristaltic movements. In the first ten days or so of life, it is not advisable to give aperient or purgative drugs.

Constipation is very often brought about by faults in diet, and this must be corrected as far as is possible. It should be discovered if there be either overfeeding or underfeeding if fed at the breast or otherwise, and these faults should be rectified.

With regard to curative measures, it must be borne in mind that dilation and inertia of the bowel due to over stimnlation from acute diarrhea owing to improper feeding, or from the abuse of purgatives are responsible for the majority of cases of constipation in infants. One means of meeting this condition successfully is by the use of petroleum oil. The action of this oil is wholly mechanical, that is, it is not absorbed by the tissues but passes out of the bowel in exactly the same condition as it enters the mouth. It is a lubricant and protective, it will soften the hardest scybala, and will render the stools soft and plastic. Of course, petroleum oil is not a panacea for constipation in infants and frequently other adjunct measures must be called into use such as massage of the abdomen, electricity, and occasionally the administration of cascara sagrada and nux vomica. Irrigation, too, may sometimes be necessary. In certain cases, those in which marked dryness of the motions is the prominent feature, the administration of salicylate of soda, citrate of sodium, vinum ipecacuanha and iodide of ammonium may be indicated, but these are generally last resorts, whose employment may leave the condition worse than it was before. In the treatment of constipation in infants, the most simple measures should be employed; especially is the administration of purgative contraindicated, and this is why the use of petroleum oil is recommended. It is harmless and its action is usually effective. The greatest remedy for the cure of constipation in infants, is by careful and systematic training to establish regularity of habit. Mothers and nurses are apt to be neglectful of the fact, generally through ignorance of its importance, that regular habits of evacuation should be enforced in infancy. It should be seriously impressed upon those who have the care of infants that by persistent endeavor these habits can be firmly established, and that in the interests of the individual and the race, the results will fully justify the trouble taken.

THE WORM TURNS

Is the patient, plodding, hard-working country practitioner, the "angel of mercy," "pounding" the country roads by day and night, often with an armour of leather engirdling and strengthening the poor tired back, weakened by the constant abuse of service—not for profit, but for human comfort and welfare—too busy to look very far beyond his own bailiwick, measured by miles and miles of sparsely settled hills, valley and plain, too tired to notice more than the mounting duties in front, using every ounce of strength and every minute of long, long hours to perform the professional work in hand, to be burdened still more, without his knowledge or consent, is a yoke too heavy and impossible for safe carriage, to be placed upon his shoulders by making it obligatory subject to a fine of $2,000 or a jail sentence of five years, or both, to keep a detail record of narcotics dispensed? Is this record necessary in the public interest? Is it a record which in fact can be kept? Who is suggesting this record—the public, the government, the medical profession? Who will benefit by prohibited dispensing? Think it over.—Exchange.

THE CONTROL OF WHOOPING COUGH

Of course, whooping cough is both very prevalent and fatal among young children. This was, when whooping cough was regarded as a more or less necessary evil in child life and no special steps were taken to prevent its spreading. Sometimes even medical aid was not called in but the patient was treated with simple household remedies. However, it is not the question of treatment which will be discussed here, but that of prevention, or rather of prevention of its spread.

Whooping cough may be described as an acutely infectious highly contagious disease of early childhood, sporadic and epidemic, the chief characteristic of which is a paroxysmal cough. It may also be stated that it is quite one of the most dangerous diseases of early childhood and consequently a disease which should be controlled as far as is possible.

Dr. Baillozz described an epidemic which occurred in Paris in 1573 and termed it La Quinta or Tussis Quintana. Willis, in Great Britain, in 1667, described it under the name of "Chin Cough," probably a corruption of "Quintana" meaning a cough which occurred every five hours.

It spreads with great rapidity through a community especially in the cold months, attacking all those who have not acquired immunity by a previous attack. It goes without saying that children living largely in the open air or in well ventilated rooms stand the best of chance of escaping infection.

Its etiology or perhaps it might be more correct to say its bacteriology, is practically unknown, probably it is caused by a micro-organism according to Cautley, the evidence is in favor of a gram-negative bacillus closely allied to the influenzt bacillus. Whatever the cause may be, as said before, the malady is very infectious and contagious and every effort should be put forth to prevent its spread, in fact to control it in every possible manner.

Naturally, as New York is a very large, and particularly because it is a very over-crowded city, whooping cough is rife within its borders. The disease is known to cause in the American metropolis three or four hundred deaths per annum, more than half these being infants under one year of age. So serious is the situation in this respect that the Director of the City Bureau of Infectious Diseases has decided to set on foot certain measures calculated to curtail this loss of life. Let the fact that whooping cough is infectious for a week or more before the appearance of the tell-tale whoop makes its diagnosis possible, the spread of infection at the onset cannot be prevented. In consequence, the Department of Health proposed to concentrate its efforts on protecting infants and very young children from infection, and on providing suitable care for such of them as may contract it. Various arrangements with this end in view have been made, among which are placing patients in "day camps." It is hoped that a disused ferry boat moored close to a children's hospital which will serve as its base of supply may be available for use as a "day camp." District nurses will devote a large portion of their time to visiting the homes of infected children, to advise and educate parents in the management of cases and in the best methods of avoiding the spread of infection. It is pointed out in the Reprint Series No. 17, May, 1914, of the Department of Health of New York City, the authors of which are Drs. J. S. Billings, W. H. Park and Anna W. Williams, that although whooping cough is notifiable in New York City, the notification is not made in so careful a manner as is desirable.

Enough has been said to show how vitally important it is that whooping cough be efficiently controlled. It is well that the New York Department of Health have taken up the matter in its usual thorough way.

SPECIAL INTERNAL SECRETION NUMBER WOMAN'S MEDICAL JOURNAL

The editors of the Woman's Medical Journal wish to call especial attention to the March issue which will be an "Internal Secretion" number, and will contain much of interest on this most interesting subject.

The contributors are particularly well known and able members of the medical profession. Dr. Eugene Hertoghe of Antwerp, Belgium, is perhaps the foremost authority in Europe on his specialty, "Hyper-thyroidism," and he contributes a most helpful and scientific article on researches he has made in his study of the thyroid gland. Dr. Henry R. Harrower, of New York, is an authority on "Hormone Therapy," having recently written a very important book having for its title "Practical Hormone Therapy." Dr. Harrower will consider mammary therapeutics in an article entitled "The Mamma as an Internal Secretory Organ."

Readers of the Journal need no introduction to the other contributors of this special number. Dr. Mary Sutton Macy, and Dr. William Seaman Bainbridge, both of New York, have frequently given us helpful and sound advice in their former contributions. In this number Dr. Macy will write on "Rest as a Therapeutic Measure in Systemic Goitre," while Dr. Bainbridge will give some of the results of his large experience in the study of the "Internal Secretion of the Ovary."

Our readers are assured of a splendid symposium, which will prove both helpful and inspiring.

APOLOGIES.

We apologize for the lateness of the appearance of the February issue, which was due to the fact that all our galley proof and copy was lost in the mails and we had to supply new copy which caused unavoidable delay—which the Editor deeply regrets, and begs the kindly consideration of our subscription and advertising patrons.

PEDIATRICS

ORIGINAL ARTICLES

THE SCOPE AND FUNCTIONS OF SCHOOLS FOR MOTHERS

BY ERIC PRITCHARD, M.A., M.D.

It is not my intention to refer at length to the history of the movement which has resulted in the establishment of Health Societies, Infant Consultations, Schools for Mothers, and such like institutions in so many parts of the country, further than to indicate certain milestones which have marked its progress.

In the first place it is interesting to record that one of the very first of these institutions was founded here in Liverpool in the year 1893, under the title of "The Ladies' Sanitary Institution," and that in the neighboring city of Manchester a somewhat similar association, namely, "The Ladies' Public Health Society," was brought into being even earlier than this, in the year 1887. It cannot be claimed that the work undertaken by these pioneer societies was specifically directed towards the amelioration of the lot of infants, but it operated indirectly in this direction and paved the way for this particular kind of work, which first took concrete shape in Wakefield in 1903, under the energetic lead of Miss Marguerite Le F. Boileau, and in 1904 in Huddersfield through the initiative by Mr. Benjamin Broadbent.

The first Health Society to be founded in London was that of Westminster, in the year 1904, a large and energetically conducted society which depended for its success on a carefully organized system of domiciliary visiting.

In the year 1906 St. Marylebone widened the field of activities open to such societies by the institution of the first center under medical supervision to which infants could be brought

---

*Read before the National Conference on Infant Mortality, Liverpool, England, July 2 and 3, 1914.

for periodic examination and advice; this system of medical inspection (Infant Consultations), combined with house-to-house visitation by properly qualified voluntary health visitors, has formed the basis on which most of the more modern health societies have been constituted. In the following year, 1907, St. Pancras organized a still more ambitious association, which, under the title of "School for Mothers," included under one roof a system of medical inspection, a restaurant for nursing mothers, classes for needlework, cookery and all those other branches of domestic economy which are now understood under the term Mothercraft. From this time forward in rapid succession, and in almost bewildering numbers, new associations were inaugurated in Birmingham, Reading, Stepney, and other large centers of population, all of them in a voluntary capacity directing their energies towards the relief of infant mortality and most of them working in the closest co-operation with the Public Health Authority. In 1909 the number of these societies had so increased that their federation under a central society was considered to be justified. Thus was founded a society which at first was known as the Society of Infant Consultations and which within eighteen months of its foundation was merged, as an independent department, in the larger organization of the National League for Physical Education and Improvement. This new department was called "The Association of Infant Consultations and Schools for Mothers," and it is now a most flourishing and active body, to which are affiliated 118 local societies, with 217 branches in different parts of the country. The work of this Association is mainly concerned in the co-ordination of the activities of local societies, in the collection of statistics, in the promotion of new branches, in the preparation and distribution of leaflets and press literature bearing on the subject of Mothercraft. It also organizes National and Inter-school Mothercraft Competitions, and in many other ways brings its influence to bear on the maintenance of a high standard of efficiency in the work done by the affiliated societies.

It is difficult to appraise with any degree of accuracy the extent to which this voluntary and educative movement has been instrumental in lessening the mortality among infants in this country, because its work has been so inextricably bound up with that of the Public Health Service, and because its influence is in many ways oblique and indirect. It is, however, well to remember that most of the factors which are generally considered as having an important bearing on the mitigation of infant mortality—I mean such factors as improved public sanitation, greater general prosperity, better housing and a higher standard of living—had full opportunity of proving their influence in this direction during that period of unexampled sanitary and hygienic reform which extended from the middle to the close of the last century. During this period the general death-rate continued to fall in a way that falsified all the preconceptions of statisticians and all the actual calculations of life insurance authorities, and yet the death-rate among infants under 1 year of age remained during the last four years of the century at exactly the same figure, namely 155 per 1,000 births, as it stood at during the four years included between 1861 and 1865.

During the last fourteen years the death-rate among infants has steadily declined from this enormous figure to a comparatively satisfactory level, i.e., between 90 and 100. In London itself it has fallen to 91. It would be illogical to ascribe these striking results to any one direct cause, but they must clearly be due to some new influence not in operation before 1900. The falling birth-rate and many other national social, and economic conditions have all combined to enhance the value of infants, and hence more care and trouble has been taken both by private individuals and public authorities to protect and preserve this valuable asset. The period of decline in the death-rate among infants has coincided with one of immence advantage in our knowledge of the feeding and general management of infants and young children. During this period almost a new branch of medicine has been created, a branch which is exclusively devoted to the study of the child in health, as distinct from that which is concerned with the study of disease. The two branches are necessary complementary, but up to the end of last century our medical students were taught to attach an exaggerated importance to the latter. Today all this is very different. Our whole system of medical service is changing, and our chief energies are now directed towards the early detection and cure of small ailments and defects in the child before they have assumed serious proportions, and while they are still amenable to treatment.

Experience gained at Gouttes de Lait and other institutions, where large numbers of infants have been constantly kept under skilled medical observation, has revealed some very curious facts. It has shown, for instance, that the successful management of infants, whether breast-fed or bottle-fed, depends on the observance of a few very simple rules and principles which can be easily taught by a good teacher to moderately intelligent mothers, and very easily followed out in the home, in spit of unfavorable social and hygienic conditions. The second prize in our recent Mothercraft Competition in London was carried off by a woman who was successfully bringing up a family of three on 11s. 6d. per week.

The late Professor Pierre Budin very clearly proved the truth of the statement that good management is the chief factor in his Clinique Tarnier, in Paris, and it has also been proved at the School for Mothers in Ghent with results which a friend of mine described the other ray as being "too good to be true." To these latter results I shall return later, but for the moment, I would indicate briefly the simple principles on which the successful management of infants has been shown to depend. This knowledge has been arrived at by the collective evidence of a large number of Schools for Mothers in France, Belgium and England. If infants are breast-fed, the feedings must be given at absolutely regular intervals and at not too short intervals; the infants must not sleep in the same beds as their mothers, and they must not be fed more than once at night, preferably not at all. They must not be wrapped up in too many clothes, they must not have stiff binders which impede movement, and when it is added that they must be regularly bathed, regularly aired, and regularly exercised, it may almost be claimed that al lthe canons of good mothercraft have been enumerated. It has clearly been proved that infants do not die because they do not receive enough food, they die because because they are fed irregularly or too often, or because they are given too much. They do not die because they are exposed to cold and the inclemency of the weather, they die because they are kept too much indoors, with windows and doors too closely sealed; they die because they have too many clothes, not because they shiver in rags; they do not die because they are unloved and uncared for, they die because they are rocked and nursed and comforted too much; they die, in fact, for want of good mothercraft, and not because of poverty, starvation or bad sanitation. Infants will live and thrive in spite of poverty and bad sanitation, but they will not survive bad mothercraft, and this is the discovery that schools for mothers have made, and the secret of this huge fall in the mortality rate during the last ten years. This discovery, this knowledge has filtered down from expert sources to the lower levels of intelligence, and it has welled up from the springs below and permeated every social stratum. Today an infant has a better chance of survival if it is born in the most unsalubrious area of the East End of London than it had fourteen years ago in the healthiest and most favored parts of Hampstead, and I maintain that this extraordinary result has been mainly secured by the spread of a knowledge of mothercraft through the agency of the Public Health Service, through the research and propaganda work of Schools for Mothers and through the ordinary channels of personal communication.

It has now become the fashion to take an intelligent interest in matters of health generally, but in knowledge which relates to the health of babies I notice the most extraordinary improvement of recent years. Fathers, as well as mothers, now often make quite a study of the subject, and what with the active missionary work of whole armies of health workers, official as well as voluntary, and the educational influence of School Care Committees, enlightened knowledge on these subjects is spreading through the land like a fierce and living contagion. The most active foci of infection are undoubtedly those little bee-hives of industry which are known as Infant Consultations or Schools for Mothers. Here congregate together all those who take the keenest interest in infant welfare work, doctors, nurses, mothers, daughters, and sometimes fathers; and here pass in review before the eyes of intelligent observation all the phases of health, development and disease. To my mind it is impossibl eto overestimate the value of such object lessons. In the old days of darkness and ignorance women were counted authorities in baby management if they had had a tolerably large experience in their own families. We know how misleading these narrow experiences can be, we know that infants will occasionally survive the most monstrous mismanagement, and that owing to the accidental success of certain dangerous practices similar methods have been extended to other infants at the peril of their lives. At Infant Consultations visitors can see not individual infants, but scores of infants treated in accordance with various methods, and they can observe the results and draw their own conclusions. For this reason I regard it as important that the medical direction of these institutions should be in the best and most skilful hands. Budin said an Infant Consultation was as good as the man who conducts it, now perhaps we should say as the woman who conducts it. It is, therefore, a matter for congratulation that there is a distinct tendency for the more highly qualified practitioner to take up this class of work. In London and in some of the larger provincial towns the same class of men and women who hold hospital appointments are giving their services to this new work, and certainly with no loss of dignity to themselves, for it is becoming more and more recognized that preventive medicine is one of the highest and worthiest branches of our profession.

One of the chief aims of "The Association of Infant Consultations and Schools for Mothers" has been to induce both men and women with the highest qualifications to take up this line of preventive work, and there can be no doubt that immense developments in this direction lie in the immediate future. Infant Consultations are not yet entirely utilized to full advantage as schools for medical students, young mothers of the upper and middle classes, and possibly for some of the older girls in the elementary and secondary schools. They certainly offer most valuable opportunities for the instruction of domestic nurses.

Not only is it desirable that highly qualified medical men and women should give their services to these institutions, but I also regard it as of immense importance that, as regards the methods of artificial feeding employed, more than one system should be employed, in order that their respective merits may be demonstrated to those who attend for the purposes of instruction. At one Infant Consolidation with which I am acquainted, one of the doctors in attendance is an advocate of raw milk. Another of pasteurized. No doubt some useful deductions as to the respective advantages of the two methods will be forthcoming as the result of the varied demonstrations. At my own Consultation I employ every method with which I am acquainted, and I continually introduce new methods and new devices in order to test their value.

To indicate how a change of methods can influence the mortality and morbidity rate among the infants on whom they are practiced I would give the following examples. In the year 1891 before the Nathan-Strauss Pasteurizing Milk Stations were opened in the old city of New York, the deaths from epidemic diarrhoea among children under 5 years of age were at the rate of 125 per 1,000 for the three months, June, July and August. From the year of their institution until the present time the rate has been steadily falling, until last year it was reduced to the highly creditable figure of 38.

It is not claimed that other factors are not concerned in this result as, for instance, the more exact measurement of the milk supplied to infants which the Nathan-Strauss system involves, but there can be no question but that the main factor has been the supply of clean safe milk, instead of the highly dangerous and foul milk which was previously distributed in this quarter of New York during the summer months. Experience has proved that the precaution of sterilizing milk in the home with the same purpose in view has similarly been instrumental in decreasing the number of cases of diarrhoea in the hot weather, and to teach how this can be done efficiently is one of the functions of a school for mothers. Again, Dr. G. Variot, who has had a very wide experience in the medical supervision of a large number of infants at his Gouttes de Lait, Belville, Paris, has been able to show that if sufficient care be taken in the management of artificial feeding the condition of nutrition at the twelfth month is not necessarily inferior to that of breast-fed infants.

Now to return to the experiences of the School for Mothers at Ghent which were characterized by my friend as being "too good to be true." I give these on the authority of Professor Porcher, of Lyons. In 1901 the death-rate of the infants attending the Consultations was 260 per 1,000, a most appalling figure. Two years later, in 1903, sterilized milk was substituted for so-called fresh milk in the artificial feeding of those infants who were not breast-fed, and the death-rate fell to 140 per 1,000. In 1907 a system of domiciliary visiting was inaugurated, and the rate fell to 60 per 1,000. In 1908 dried milk was substituted for sterilized milk, and the rate fell to 34 per 1,000.

In consideration of the excellent results claimed for dried milk, I may add that my own experience fully bears out the Ghent results. Since I have employed dried milk in the artificial feeding of infants epidemic diarrhoea has had no terrors for me, as far as the artificially led infants attending at my infant consultation are concerned. Even in the year 1911, which, owning to the heat, was so fatal to infants, I had no serious, and only one or two slight, cases of summer diarrhoea among all the artificially fed-infants attending my clinic. Those experiences, though by no means conclusive, seem to me to point out that among the many simple requirements for good mothercraft, the adoption of a good method of artificial feeding is one of the most important.

It is especially in this respect that the work of a central co-ordinating society, such as our Association of Infant Consultations and School for Mothers, can be so useful, for at our conferences, discussion and committee meetings, we have not only many opportunities for the exchange of experience and the comparison of statistics, but we have all the machinery for the direct and rapid dissemination of new and useful knowledge. In this connection I attach great importance to the recent press campaign which has been initiated as one of the items in our propaganda. We publish from time to time in National Health, and owing to the kindness of their editors, in a large number of provincial papers, short articles on mothercraft which have been approved of by the members of our executive committee, a committee which makes a special study of these points. We also publish occasionally a series of mothercraft questions, and the approved answers. We also organize both for London and the Provinces annual mothercraft competitions in which the various metropolitan and provincial schools for mothers contend in friendly rivalry for a challenge shield As one of the examiners in these competitions, I am in a position to judge of the standard of knowledge displayed by the competitors sent up from the various schools which take part in these competitions, and I can definitely say that even within the last twelve months there has been an enormous improvement in the knowledge displayed by the mothers. Some of the answers given by the mothers in this year's mothercraft examination are astoundingly accurate and to the point.

What of the future of these institutions? The movement seems to grow more and more rapidly, in fact quite as rapidly as it has grown in France, where there are now over 1,000 welfare centers. In this country we have in all about 400 centers. If the same rate of increase is maintained we shall soon rival the number of French institutions.

The Schools for Mothers movement has not only indicated its right to survive, but also its right for public recognition and support. Indeed, the time may now be said to have arrived when the burden of financial support should be lifted from the shoulders of those who do the work, and when the medical services afforded should no longer be allowed to continue on a voluntary basis. The principle of endowment appears to have been recognized by the Government, and it had been hoped that out of the grants of aid promised some monetary assistance would be immediately forthcoming to further the object by these useful institutions. It does not, however, appear clear that our anticipations will be immediately realized. In view, however, of the possible provision of such grants in the future, it becomes a matter of great concern to those who are engaged on the voluntary side of this movement to know how these grants will be administered.

If these voluntary institutions are to be financially State-aided it is clear that thef must fall completely or in part under the control of the State, for it is certain that there can be no endowment without control or inspection. It seems logical that if any public body is to undertake the care and supervision of infancy, it must be the authority which is responsible for the health of the whole community, preferably a Minister of Health. If we entrust to any public authority the care of the lives of the community, it is impossible to contemplate that the care and supervision of the most important period in the life of the individual, namely, that of infancy, should be divorced from its natural setting and entrusted to any other authority. The work of schools for mothers comes into contact with the work of the pocal public health authority at a great many points; and if the field of their activities becomes extended in the direction of ante-natal supervision, as is confidently believed will be the case, it will come into contact with the public health authority as many new points.

The problem at the moment appears to be not so much whether schools for mothers are to become part of a public health service—for the best organized of these institutions have always worked hand in hand with this authority, have acted in fact, as voluntary and ancillary departments in close co-operation with it—as to what extent the granting of these endowments will affect the autonomy and voluntary character of the existing societies. Many of the larger and better equipped institutions would, I feel sure, strongly resent being taken over, lock, stock and barrel, by the municipal authorities. On the other hand, the standard of efficiency of many of the second-rate and third-rate centers would be distinctly raised by such an absorption.

Personally, I must admit that if these grants in aid art to be utilized for the purpose of endowing these voluntary institutions and schools for mothers, I should like to see these funds distributed among the participating municipalities in much the same way as the funds of King Edward's Hospital Fund are distributed to the various hospitals which earn grants; that is to say, on a basis of efficient and economic administration. In the same way that badly administered hospitals receive only small grants or no grant at all, so should those municipalities which neglect public health questions and do not take a sufficiently serious view of their responsibilities, especially with regard to the prevention of infant mortality, should either receive no grants at all or on a greatly reduced scale. Such power in the hands of the central authority, be it the Board of Education, the Local Government Board, or a Ministry of Health would, in combination with an efficient service of inspection, be a very powerful lever to bring recalcitrant municipalities to book.

In conclusion, I would briefly summarize the views expressed in this paper by stating that, in my opinion, the most effective weapon with which to fight infant mortality is good mothercraft; that good mothercraft is best taught and best learned in schools for mothers; and that the work of these institutions deserves public recognition and some form of State endowment, with stringent inspection by the central authority In many instances it would be regrettable if these institutions were to lose their independence and become absorbed in the public health service, although if absorbed at all they should form part of one consolidated public health service under a Ministry of Health.

THE REDUCTION OF INFANT MORTALITY: HOW CAN IT BEST BE ACCOMPLISHED?*

BY THOMAS N. GRAY, M.D.
East Orange, N. J.

(With special reference to the problem in New Jersey)

A conclusion as to the methods and lines of direction to pursue which will result in a marked lowering of infant mortality in New Jersey can be arrived at only through a consideration of the underlying and immediate causes; the means so far used to lower it; and the results accomplished by those means.

From such analyses and study have come the following worked out analyses of the death rate from all angles, and a study of observations of post-natal facts, which do not show in the published death rate.

From such analysis and study have came the following findings: The large majority of deaths under five years of age occur under one year, with the greatest proportion in the first three months of this year, the first month the most fatal of these months and the first week the most fatal period in this month. Cities have a much larger percentage of deaths than have the rural districts, with this percentage still larger in manufacturing cities; the tenement districts in cities furnish the large majority of deaths in a city; the death rate during the summer months is far greater than is that of other seasons; more deaths occur in the practice of midwives than in that of physicians; deaths, after the first two weeks, are almost entirely among the artificially fed; the majority of infants on the breast for the full nursing period survive, even in the most unideal surroundings; if an infant is breast fed for the first three months, its chances for surviving the balance of the year on artificial feeding are greatly increased, this being true in unideal as well as in ideal environment.

These findings establish the first year of life—the nursing period—as the critical year of life, and show that pre- and

*Read before the New Jersey Medical Society and published in Journal of the New York State Medical Society.

neo-natal causes must operate to make the first week, month and three months of this year the most fatal time of infant life. They also establish the fact that causes, besides artificial feeding, operate in cities which do not operate in the country to any extent, and never pertain to the home with comfortable income, hygienic conditions, sunshine and fresh, moving air. as in the country, and in the house with ideal conditions, the majority of artificially fed infants survive, while in the tenement districts of the cities the majority die.

The pre- and neo-natal causes are varied. Syphilis is undoubtedly almost entirely responsible for the deaths which occur in the first few days of life and is, as well, largely responsible for the deaths occurring under three months. The absorption of metallic poisons, especially of lead, by the mother is a direct cause of impaired vitality in the infant, which makes it succumb to slight causes in the early weeks of life. How common is such poisoning by lead is shown by the last published report of the United States Bureau of Labor, which gives the ratio of those working in white, yellow, art and utility ware and in tile works—one in five.

The large death rate in manufacturing cities shows influences at work which are not present in non-manufacturing cities. Economic conditions compel the mother to work in the factory and to contime the work to within a short time before the birth of the child; and the same poverty which compels the work makes impossible food of proper character and quantity for a pregnant woman. Under such conditions the woman is low physically, and the infant is necessarily ill-nourished and low in vitality. Ignorance on the part of many, in the tenement districts particularly, of the bad result on offspring of insufficient food, insufficient exercise, improper care of the general health, hard work continued through the pregnant period, crowded sleeping rooms and general unhygienic conditions, is another marked factor among pre- and neo-natal causes.

That these causes continue to act, if the infant lives through the remaining months of the first year and even through the second, is shown by the fact that the insignificant diarrhoea or slight bronchitis, for instance, of the normal infant, under healthy conditions, frequently proves fatal to the tenement infant of the same age, the fatal diarrhoea or bronchitis being the end result of conditions which began during pregnancy or before conception.

What are the post-natal causes operating in cities? Economic conditions, artificial feeding, environment, ignorance, midwife, tuberculosis. The economic factor compels the mother in the manufacturing cities to return to work in the factory within three weeks after the birth of the child, at the latest. Immediately enters the artificial feeding factor; for mothers in cities who can stay at home and nurse their babies will save them in the majority of instances, even if the environment is of the worst, while the mothers who have to go to work and put their babies on the bottle, bury their infants with great regularity. Two striking instances of the part artificial feeding plays in infant mortality are the following: During the cotton famine of 1860 women workers in the cotton mills were idle and consequently nursed their babies for the whole or greater part of the first year. The death rate in these cotton mill cities fell fifty per cent. During the Siege of Paris, in the Franco-Prussian war, cows' milk was unobtainable, and mothers whose habit it had been to feed their babies artificially were compelled to nurse them through the nursing age. The death rate of infants in Paris for the year fell from 33 per cent to 7 per cent.

The environment factor precludes fresh, moving air and sunshine. The normal infant requires these for perfect development. How vital they are to an infant below par! The ignorance factor makes for unintelligent care of the infant, the unhygienic house and unhygienic care of milk, bottle and nipple, all of which, under such conditions, are agents of death. Environment and ignorance are also responsible for many of the deaths of the breast-fed that occur in the tenement districts of cities. The midwife acts as a factor because, as a rule, she does not instruct the mother as to the importance of breast-feeding, because of lack of knowledge on her part of the fateful results of artificial feeding. The same lack of knowledge holds true as to the necessity for cleanliness of utensils, bottles and nipples and care of milk when the infant is artificially fed.

There is a difference of opinion as to whether infants can be infected by milk from a tuberculous cow. That the meat of a tuberculous animal will infect a human being is an established fact. This being so, it is a fair inference that milk from a tuberculous animal will do the same.

There is the same difference of opinion as to the entry port of bacilli of the human type, some maintaining that inhalation is the mode of entry of the bacilli in most instances, others that the chief mode is by food to the intestines. Whether the greater number enter by inhalation or by food should not enter into the question of prevention. We know that infants in their play on the floor contract tuberculosis from the dust blown in from the street, or from sputum deposited on the floor of the ignorant home; and we know that younger infants contract it, if not playing on the floor, through the inhalation of the bacilli-laden dust in the unhygienic home. We know, too, that it is contracted from milk contaminated with bacilli in handling and through lack of protection from dust. Environment is a source of increase in the number of tuberculosis cases, as open air and sunshine are prophylactic and disinfectant—and both are lacking in the tenement.

What are the factors in the increased death rate in the summer months? Heat—not necessarily excessive, humidity, environment, ignorance, poverty and artificial food. Excessive heat alone, or humidity alone, depresses the infant in functionating power and in resistance to the toxins of bacteria. Heat and humidity combined, even if the heat is not excessive, act more quickly and markedly. The heated atmosphere interferes with the loss of body heat, humidity still further interferes by preventing evaporation. In consequence of retained heat and inactive skin, the infant's metabolism is interfered with. The child with normal resistance can withstand the conditions for a time and recovery from an illness if the home is in the country and it can escape some of the effect of the heat and humidity through the breeze under the tree or on the porch. This opportunity is denied the infant in the tenement, and it must make its fight in the stuffy room, its only relief coming when night allows the use of the roof.

The same atmospheric conditions affect the milk. It may be of low bacterial count when it leaves the dairy; but through lack of ice during transit it reaches the house with the count greatly increased. Or the milk, clean at the dairy and properly iced during transit, comes to the house where the ignorant mother knows nothing of home, personal or milk hygiene, and where, perhaps, poverty precludes ice. In such a home the conditions are ideal to make the cleanest possible milk rapidly dirty. In the winter, with the temperature of the air keeping the milk cold, and the infant in better resistance condition, the artificially-fed of the tenement not infrequently live; but in the summer months, with atmospheric conditions depressing vitality and digestive systems, the dirty milk makes the death rate big.

We have seen how artificial feeding runs along with all the other factors; and the two facts, developed earlier, that the majority of infants who die within the first year, with environment, economic, poverty and ignorance factors playing no part, have been artificially fed, and that the breast-fed infant born with normal vitality will survive, in the majority of instances, in the worst kind of environment, establish artificial feeding as the greatest single post-natal factor, and invite the query: Why so many artificially-fed infants? We have seen that the economic factor which compels the mother to abandon her infant in order to return to work in the factory and the uneducated midwife are responsible for practically all of the artificially-fed in the lower strata of life. In the upper strata the woman differs from her sister in the lower in that she abandons her infant so that she may have more time for her outside interests. The accommodating physician differs from the midwife in that he is educated and knows the dangers of artificial feeding. Here, at least, the medical profession in its organizations can do something positive, by branding as unethical the physician who accommodates himself to the mother who wishes to put her infant aside.

What has been done in this State to minimize those causes which begin prior to or during pregnancy? A beginning has been made toward the education of the ignorant mother, through visiting nurses. These nurses teach the mothers the necessity for care of themselves and their health to insure healthy, normal babies; also they teach the danger of artificial feeding, and, if this becomes a necessity, how to modify milk and how to keep it, and everything that comes in contact with it, clean. Such education has been under way for too short a time to estimate results; but these can be forecasted by the remarkable results obtained in New York City, by this means alone, in infant mortality reduction. In addition to this, one hospital, at least, is giving midwives ante- and post-partum instruction in the care of the mother, and teaching them the necessity of breast feeding for as long a time as possible, and the necessity for a clean, and kept clean, milk. Also it is supplying wet nurses who have been tested for syphilis and tuberculosis.

Within the past two years a philanthropic movement to curtail syphilis has been undertaken, through education of fathers and mothers as to the effects of this infection on life, and on infant life particularly, and to urge them to give their children that knowledge of sex matters which will safeguard them, so far as they can be safeguarded, by knowledge gained from parents. Such a course on the part of parents cannot but result in a cleaner fatherhood and motherhood than pertain at the present time.

At the last session of the Legislature a bill, which is now a law, was passed providing a better safeguarding for those engaged in occupations which subject them to the danger of metallic poisoning. That this will result beneficially is certain, as such a law in England has reduced the number of women poisoned by lead alone to one in sixty, from a former ratio of one in seven.

The educational work through visiting nurses, hospital training of midwives, sex hygiene work and the metallic poison law, makes the sum total of effort against pre- and neo-natal causes operating to aid in the production of the high infant mortality.

What effort has been made in this State toward minimizing post-natal causes? The certification of milk by a medical milk commission which, begun in Essex County, has spread until now Union, Sussex, Morris, Passaic, Hudson and Ocean Counties have a medical milk commission. The good accomplished by this means of insuring a clean milk to the artificially-fed infant has been great, but it is restricted in application, as the price of milk so certified prohibits its use in the place of greatest need—the tenement districts of the city.

Diet kitchens and milk dispensing stations which provide a clean milk are numerous in the State; but any beneficial result from these is negligible unless, with the giving of milk, there is provided the visiting nurse; for the milk, clean at the dispensing station or diet kitchen, rapidly becomes dirty milk in the house lacking in the rudiment of hygiene—cleanliness. While the good result of dispensing alone has proved negligible, the consultation station which, with the milk, provides a nurse speaking the language of the home, has accomplished marvelous results in lowering infant mortality in the localities where it has operated.

Although not instituted with reference to the reduction of infant mortality, the State Tenement House Commission, the Tuberculosis Among Animals Commission and the Board of Health have a bearing upon it; for with the transformation of the tenements into homes with fresh air and sunshine possible, with every tuberculous cow in the State slaughtered, and every tuberculous cow from without the State kept out, or, if gaining admittance, slaughtered, and with effective supervision of the creameries and dairies within the State and of milk coming into the State, the effect on reduction would be great. But the Tenement House Commission, with a good law behind it, is handicapped by insufficient funds; the Tuberculosis Commission has no initiative power, as it cannot enter upon a dairy farm, except on "notification by the Secretary of the State Board of Health," or by "request of the owner of the dairy animals to inspect such animals as are supposed to be diseased with tuberculosis." Even if this Commission had initiative power, parsimony again, or ignorance of legislators, allows but seven inspectors for ten thousand creameries. The report of this Commission for 1912 shows the number of herds physically tested as 230, and the number tuberculin tested as 159.

The report of the State Board of Health for 1911, under the head of Division of Creameries and Dairies, contained this statement: "To thoroughly inspect these creameries and dairies would require an inspector in every county in the State; with the present meagre force it is impossible to inspect all the farms even once a year." Because of this meagre force—a chief and four inspectors—the Division adopted, according to the report, the plan "of co-operation with those local boards of health which manifest a certain interest in their milk supply." The 1912 report of this board shows the same plan of dealing with the inspection of dairy farms.

This 1912 report reveals that less than fifty out of the four hundred and seventy-six sanitary districts in the State have the "certain amount of interest in their milk supply" which the Division of Creameries and Dairies makes the basis of inspection. These are about all one would expect to show this "certain amount of interest," when the character of the average local board of health is considered, being, as it is, composed of men to whom the appointing power is in debt, and because of this political debt, suitability is not the basis of the appointment. Of this small number of districts which have any interest at all in milk supply, four only have a penaltycarrying ordinance, requiring a license, with a definite standard of milk and a periodical examination of the milk.

In addition to this survey of what is being done within the State, a survey also of what has been done outside the State will aid in arriving at a conclusion of "how best" to accomplish a reduction of infant mortality in the State.

France, years before any other country, took steps to stay the infant mortality rate, and began active work along definite lines, urged thereto by the threatening economic, industrial, agricultural and general conditions, due to a combination of high infant mortality and low birth rate, which was rapidly lowering the population. Women were aided financially, so that they could spend the last months of pregnancy at home, instead of at arduous work, and remain at home and give their infants natural food for a definite length of time after birth; instruction was given to the mothers on self and infant care, and clean milk was provided when the time came to put the infant upon artificial food.

For some time past a number of foreign countries have forbidden by law the employment of pregnant women in factories after a fixed month of pregnancy and before a specified time after the birth of the infant, meeting the economic condition by giving the mother a pension during the time of the enforced stay at home.

New York City has for a long time had consultation stations, and given care to the character of the milk supplied to artificially-fed infants; and, since a later date, has given attention in a systematic manner to the instruction of expectant mothers, following this up with oversight and instruction through a number of months ofter the birth of the child.

The results accomplished through means employed both in the State and outside the State, must be considered before stating a conclusion. The effect of the agitation of the question of infant mortality by the medical profession through National and State public health committees and their lecture courses to the public, and by the magazine world, has been a gradual education of the public, which has resulted through this education and a consequent demand for better conditions and particurarly for a cleaner milk supply, in a lowering of the death rate of infants all over the country; and in this, New Jersey has shared. In France, the means employed quickly resulted in a great reduction of infant mortality. The same have been true in those countries which, by law, keep the pregnant women out of the factories for the definite time before and after the birth. In New York City, adding a visiting nurse to the consultation station showed immediate results, and with the institution of a follow-up educational work, these results have been greatly augmented. In our own State, outside the general reduction, due to agitation of the question of infant mortality, and the consequent general education, what reduction has been accomplished has only been in spots. The reduction, however, in these spots, the reduction due to agitation and the reduction accomplished outside the State, all emphasize the inability of public welfare organizations, through scattered and ununited effort, and emphasize with equal strength, that effort should be State-wide and uniform.

There is but one way in which this can be done, and the crux of my argument is that the State itself must apply itself to the reduction of infant mortality, this being not alone the "best" way, but the only way in which material State-wide permanent reduction may be accomplished.

Conditions of environment inimical to health and life; economic conditions, existing because of labor which unfit a woman for child-bearing and rob the infant of nature's food; civic conditions which can be bettered, but which, existing, correlate with atmospheric conditions for ill; syphilis, a communicable disease; the uneducated midwife jeopardizing life —all are fundamental, having to do with the relationship between people and government.

Many of these conditions, as referring to the adult and older child, have been so regarded. Safeguards of health, life, and limb in factories; the hours of labor for man; authority over contagions and infections; playgrounds for children; a standard for the issuing of a license to practice medicine, have all been the subjects of legislation. But, aside from quarantining and isolating infections, very little has been done for the conservation of infant life, and that little has been ineffective through the lack of funds.

The same treatment accorded to syphilis as is accorded to other infections and contagions; raising the standard of education of midwives; providing for the enforced non-employment of pregnant women in factories, for a period antedating the expected acconchment and continuing through three or four months after, with a pension per week or month equal to the amount of wages so unearned; State and municipal health departments, so constituted in knowledge of sanitation and so equipped with appropriations as to be able to give intelligent, effective supervision of milk from dairy or border line to refrigerator; more effective Tenement Commissions—all are subjects for legislation.

The questions of providing ice for the homes where there is an artificially fed infant and in which poverty precludes it; of providing parks in the tenement districts, where the infants of these districts may get fresh moving air in the hot, humid months; of providing nurses to go into the homes of expectant mothers to give instruction in self and infant care and in milk hygiene—all these pertain to the municipality, which receives its powers from the State.

Not only should the State apply itself to the work because it is the only instrumentality through which State-wide effort can be made, but also because an infant has a potential value, commercial and civic, which self-interest should lead the State to foster and care for. The State does this with the child of school age, and continues by fixing a limit of age at which a child may leave school and take employment; and the reason for doing so at this time is from recognition of the necessity to the State of robust, educated citizens—robust for their commericial value, educated for their civic value. This recognition should extend back to the infant, whose commercial value can be estimated by the effect of depopulation on present conditions; the working of mines, cultivated farms, prosperous business in city, town and village, the whirring fatcory wheels and public utilities. How would all these conditions deteriorate under a 100 per cent infant mortality! France faced a danger almost of this degree through the combination of high infant mortality and low birth rate. The loss to the State as between a 100 per cent infant mortality and a 25 per cent infant mortality is only one of degree.

The same argument holds true in reference to the potential civic value of an infant. How would all civic conditions deteriorate under a 100 per cent infant mortality, continued for a time with the State dependant upon foreign population! This has had, and has, its men and women, the influence of whose lives have had, and have, a distinct value, aside from commercial, to the State. Succinct examples of the value to the State of those qualities which are potential only in the infant are:

the one to whom we ascribe our present day world-wide civilization, whether we hail Ecce Deus, Ecce Deus-Homo or Ecce Homo, who was the infant in the manger, who survived the environment and vicissitudes of his infant life; the one whom we honor as the "Father of his Country," who was the infant in Virginia, and the one whom we revere as the "Saviour of his Country," who was the infant in the log cabin in Kentucky.

Conclusion: To inaugurate and carry on to successful issue the solution of the problem of infant mortality, the State should have a Department of Child Hygiene, with appropriation sufficient to conduct the widest investigation into the causes of infant mortality, and of the means to be used to effectively and permanently lower it, and to put these means into operation; and with that latitude of power which will enable it to make every department of the State having any bearing on life and health dovetail with its work. And the Medical Society of New Jersey should undertake the education of the public to the point where through its demand such a department shall be organized and be kept in effective operation.

A TOUCH OF PNEUMONIA, AN ABORTED PNEUMONIA, AND THE MISTREATMENT OF PNEUMONIA IN CHILDREN

BY J. EPSTEIN, M.D.

Clinical Assistant in Medicine, Vanderbilt Clinic; in Pediatrics, Mount Sinai Hospital Dispensary and Babies' Hospital Dispensary
New York City

Next to the popular diagnosis of a "touch of consumption," one frequently hears the diagnosis of a "touch of pneumonia." Unfortunately the pneumococcus not only touches the lung but converts it into an airless mass and the patient is too sick for just a gentle touch of pneumonia. This famous touch diagnosis seems to have spread to other diseases. There are some physicians who make a diagnosis of a touch of bronchitis, a touch of asthma, a touch of diphtheria, a touch of appendicitis, a touch of the grippe and many other touch diseases. The medical historian will have to discover the originator of this touch diagnosis and place his name among the immortals.

An Aborted Pneumonia

While it is possible for a lobar pneumonia to be of a short duration, either because the different pathologic stages are of a shorter duration or because the pneumonia terminates without passing through all the classis stages of congestion, red and gray hepatization, these short pneumonias are rare and above the diagnostic ability of the average physician. In the majority of cases an aborted pneumonia is no pneumonia at all, but some other known or unknown infection.

When a pneumonia does terminate in a short time it is not the result of the superior ability of the attending physician but is probably due to the low virulence of the invading microorganisms. or to the great resisting power of the patient.

The Mistreatment of Lobar Pneumonia in Children

Text books on medicine, pediatrics, and therapeutics devote much space to the treatment of pneumonia in children. Numerous articles have been written and many papers have been read before medical societies on the proper treatment of pneumonia. But not a word was said or written on the mistreatment of pneumonia in children.

Lobar pneumonia is an acute general infection with the lesion in the lung as the most prominent manifestation. It is a pneumococcaemia, the organism having been isolated from the blood. It is abrupt in its onset, has a more or less uniform course and a typical termination. The patient is severely ill, and requires careful attention.

Since there is no specific treatment for pneumonia, the patient is to be mainly treated, and not his disease.

Among the physicians that mistreat pneumonia some pride themselves in doing little or nothing for their young patients. They prescribe ultra-homœopathic doses of some medicine and leave their little patients to their fate. While these physicians show a lack of knowledge of the value and proper use of drugs, they at least don't do much harm to their patients.

Other physicians overmedicate their poor little patients with all kinds of irritating drugs and nauseating syrups. As soon as a diagnosis is made of pneumonia or a "touch of pneumonia" many physicians invariably prescribe ammonium carbonate or liquor ammonii anisatis with a half dozen of different syrups. It is a common prescription with many physicians and is used like first aid to the injured.

This medicine is prescribed to serve a double purpose, as an expectorant and as a cardiac stimulant. But there is nothing to expectorate from an airless consolidated lung in a lobar pneumonia. As a stimulant there are more reliable and less irritating drugs than ammonium carbonate or ammonia water and there is usually no indication for stimulants in the beginning of a pneumonia. What this expectorant mixture really does, only the child's little stomach knows.

After this irritating medicine comes a series of other medicines each of which is enough to make a healthy child sick, but the poor little patient has got to take them because the doctor has so ordered.

In the treatment of broncho-pneumonia the patient is equally overmedicated with all sorts of medicines which the physician himself would not care to taste.

The best that a physician can do in a case of pneumonia in a child is to conserve all its strength and energy, to combat any unfavorable signs or symptoms and above all not to upset any other system in the body when the respiratory system is in distress.

Proper feeding and plenty of fresh air with a temperature not too low in the asthenic conditions is of prime importance in the successful treatment of pneumonia. Hydrotherapy for the control of the temperature and for its primary stimulating and secondary soothing effect does much good to the little patient.

The drug treatment may be divided into three (3) classes:

(1) Catharsis.

(2) Diuresis and diaphoresis.

(3) Cardio-respiratory stimulation.

The U. S. Pharmacopeia provides a number of drugs for each of these three therapeutic classes. The physician should choose the best drug and prescribe it in a way that will be pleasant to take and will do the most good.

1450 Lexington Avenue.

CONGENITAL LATERAL CURVATURE OF THE SPINE

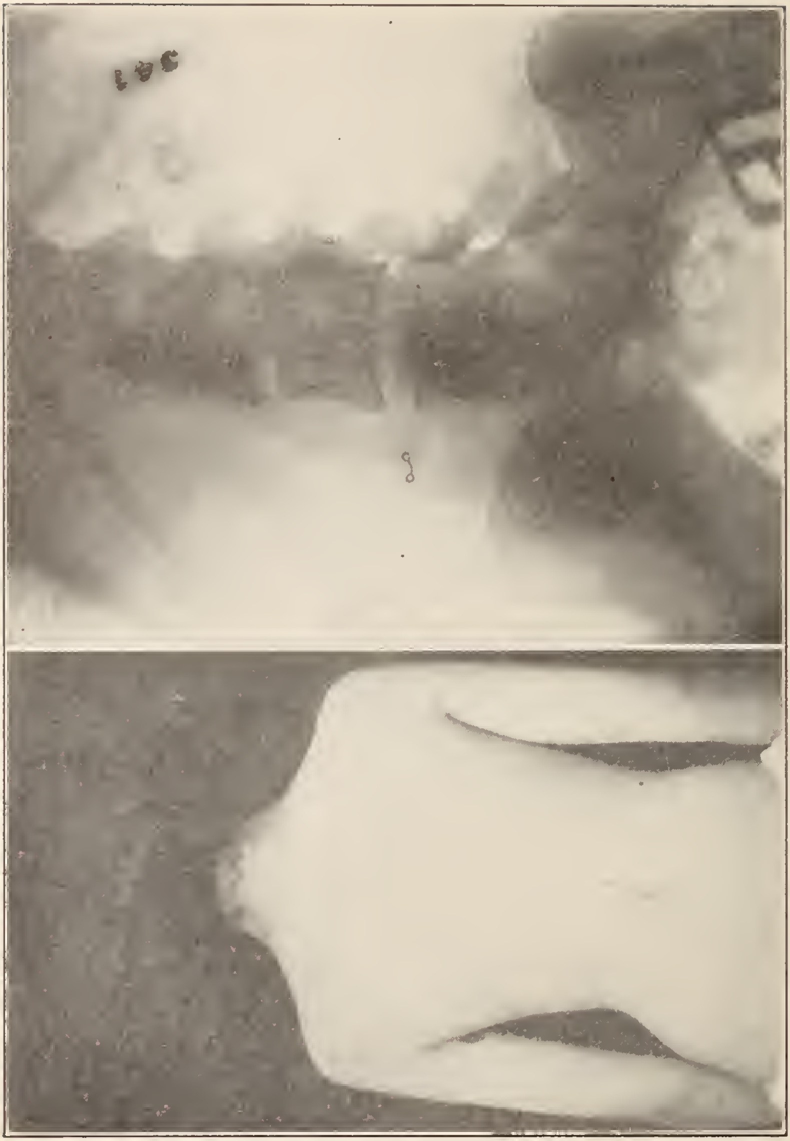
BY PRESCOTT LE BRETON, M.D.
Buffalo, N. Y.

After the advent of the X-ray, it became definitely recognized that there was a certain proportion of the cases of lateral curvature of the spine, which had their origin in congenital defects of the bony framework. The abnormal development may appear at any part of the column but is commonest in the sacrum or lumbar vertebrae, especially about the fifth lumbar. Although the bodies of the vertebrae may show change of shape or may be fused, it is the alterations in and about the articular processes, which have attracted much attention from the effect they have of tilting the column above as growth proceeds. The defect may be small, confined to one articular process, or extensive, involving both articular processes and the bodies, and affecting a number of vertebrae.

It should be the rule to X-ray every case of scoliosis of any severity, from the sacrum to the neck, and to inspect such pictures carefully, because the prognosis and treatment may have to be altered according to what is found. The treatment of an organic curvature, often so tedious and disappointing, is much less apt to be successful if a congenital malformation blocks correction by its bony rigidity.

In the history of such cases it is found that the parents noticed that something was wrong at an early age, usually before the fifth year; that the condition slowly and steadily grew worse becoming most marked about the fifteenth year. The prognosis is more favorable if it exists in the lumbar region with a compensatory curve above, because here there still remains flexibility. Hence by exercises, padded seat and change in shoe, the posture and foundation support may be changed. In the dorsal region the curve is apt to be sharp with rigid rotation, making the treatment ineffective, unless possibly the bone graft is employed to prevent further distortion.

In looking back over the histories and X-rays of previous cases, the following five were selected, as being typical and illustrative of what has just been stated. All were females. Two had lumbar curves, responding very well to ordinary measures. Two dorsal, showing sharp curves, fusion and rigidity, uninfluenced by treatment. One cervical, where the cer-



Case I.

vical and upper dorsal vertebrae are fused, causing, for practical purposes, the absence of any neck.

Case Histories

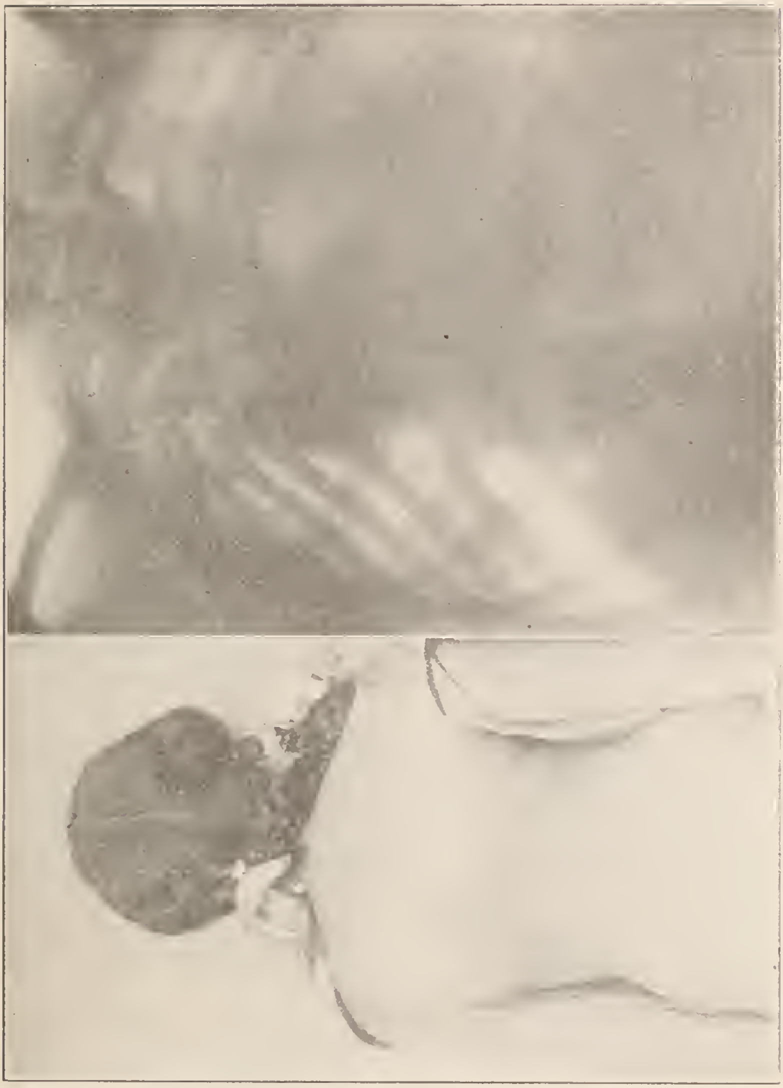
Case 1. M. G., aged 17, referred by Dr. Robertson, Sept. 12, 1912. Always active and healthy; no history of illness. The parents had noticed for years some deformity. There was a moderate lumbar curve to the right with rotation. Rigidity only on one side bending to the right. Back flat without the usual lordosis. The right leg was three quarters of an inch short, the right calf smaller than the left and some cavus shown in the right foot. By using a corrective jacket and exercises, postural correction was soon obtained. The X-ray shows a very distorted fifth lumbar vertebra, which has rotated on a vertical axis, carrying the lumbar vertebrae above into rotation.

Case 2. E. N., aged 14, referred by Dr. Mendlein, Oct. 5, 1911 Personal history, good. It had been noted for some years that the left hip seemed larger than the right. She had the habit of standing on the left leg. There was a lumbar curve to the right apex at the first lumbar, with marked rotation. A slight compensatory curve above, apex at the third dorsal. Slight rigidity on side flexion to the right. Left leg one half inch longer than the right. The treatment in this case was the same as the last. The X-ray shows the fourth lumbar vertebra not directly above the fifth. It has slipped to the right and rotated so that it looks as if the left articular process of the fourth was dislocated forward, carrying the lumbar vertebrae above into rotation.

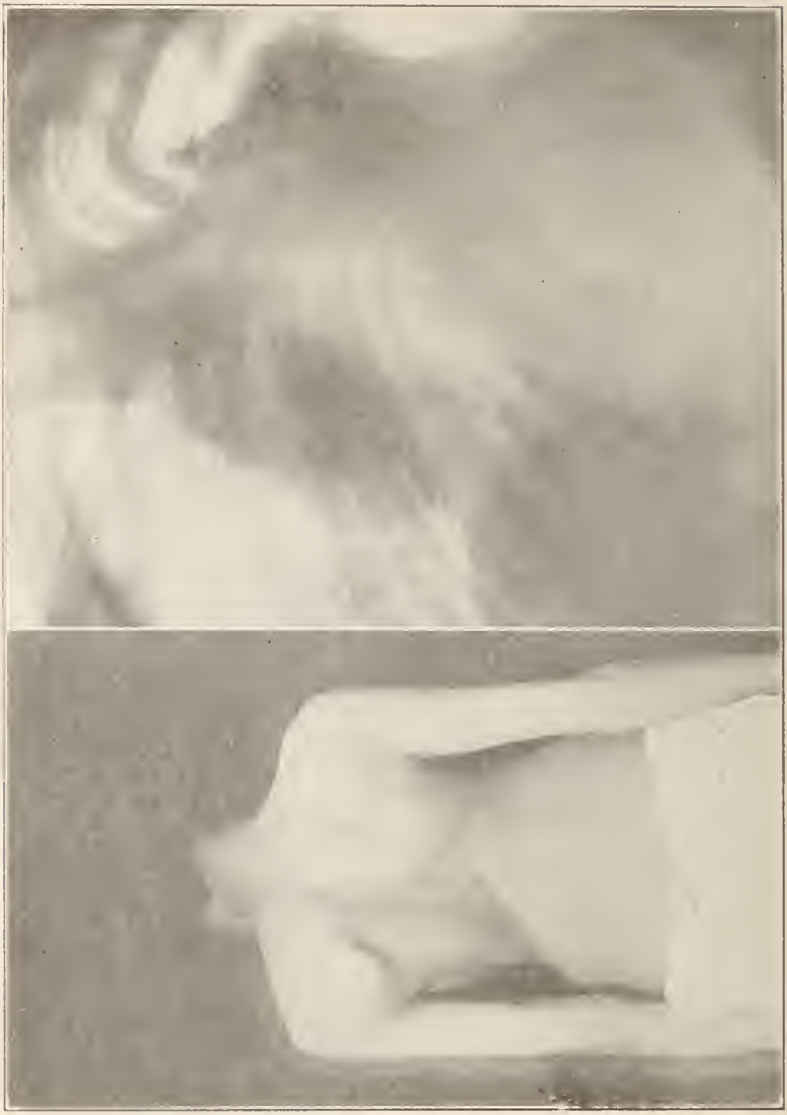
Case 3. H. M., aged 12, referred by Dr. Frederick, Oct. 21, 1910. Always strong and well nourished. At her fifth year it was noticed that the left shoulder protruded. As this increased she was given osteopathic treatments which were without result. There was on examination, a marked dorsal curve to the left, sharp, with fixed rotation. The photograph does not convey the same impression that one would receive on examining the case. The X-ray disclosed that the third and seventh dorsal were wedge shaped, and the fourth, fifth and sixth a confused mass. The lower right ribs were closely approximated while there existed a separation between the fifth and sixth, opposite the apex of the curve.

Case 4. L. T., aged 14, referred by Dr. Borzilleri, in Oct. 1912. This case was very similar to the last, only the rotation

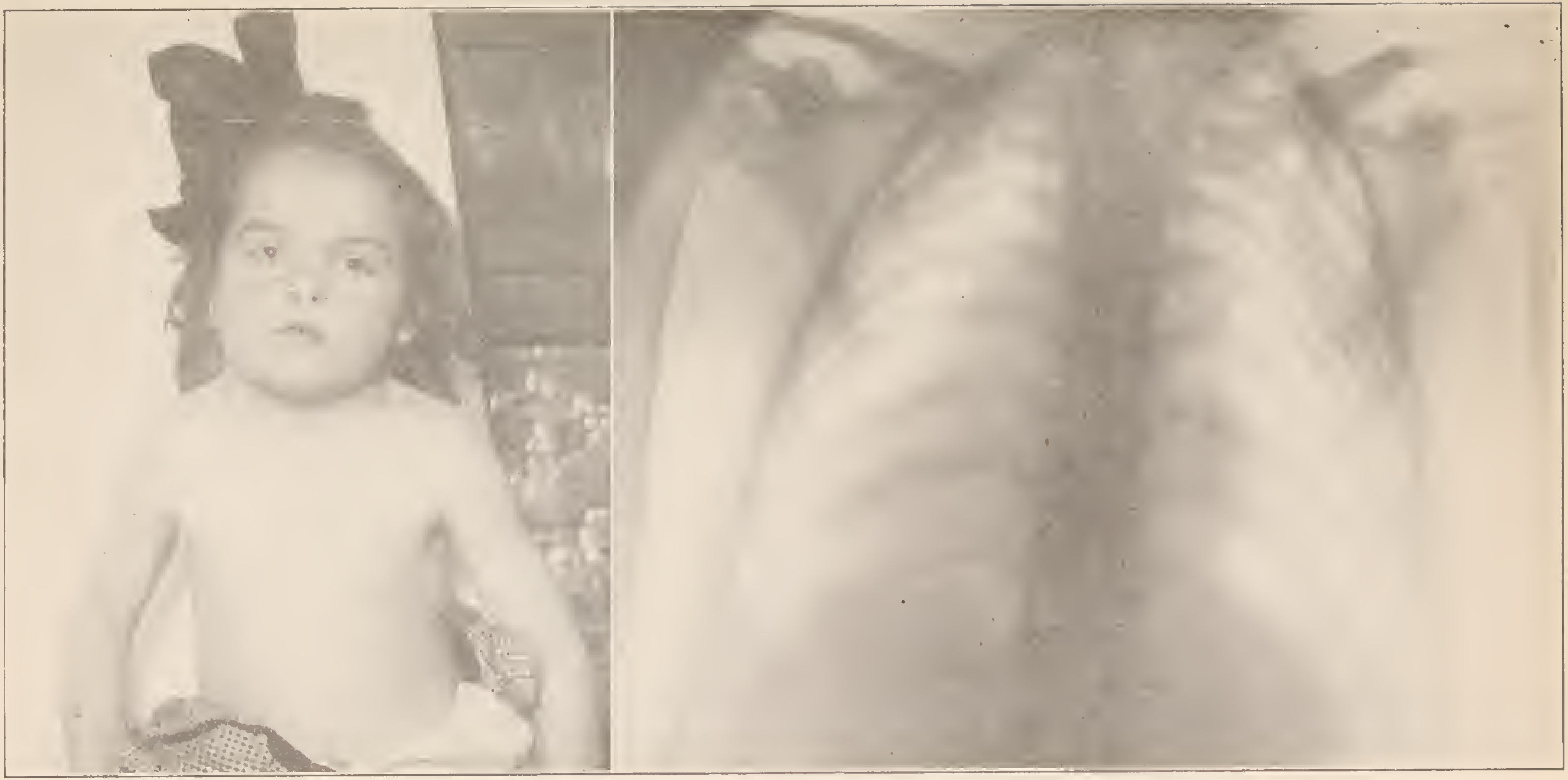
Case II.



Case III



Case IV.



Case V.

was still more marked and rigid, the chest expansion more diminished, and six vertebrae, instead of five, showed distortion and blending. The X-ray showed from the fourth to the ninth dorsal inclusive, involved in the deformity. The right ribs. close together. Between the fifth and sixth left ribs there is a hiatus or gap.

Case 5. C. H., aged 7, referred by Dr. Villaume, Jan. 28, 1910. This case was not truly a lateral curvature but the underlying trouble was the same as in cases three and four, and there would have been a lateral bend if instead of a head there were above a movable column of vertebrae. While yet a baby the mother noticed the peculiar condition of the neck and the limited head motions. Osteopathy had been tried and various braces. On examination the head appeared to be attached to the trunk with no neck. It assumed a slight wry neck position with chin to the right. All head motions very limited. Upper dorsal region showed increased kyphosis. A large bony mass was made out in the right side of the neck as if the remains of the bodies had rotated. Shoulders forward and pectoral muscles short. Unable to reach the back of the neck with the hands. By removing the brace and using the Sayre's suspension and gentle force for the neck, plus forcible stretchings for the shoulders, improvement in motion was obtained In taking the X-ray the plate was placed at the edge of the occiput, so that there was no more of the spinal column than shows in the print. The upper four dorsal vertebrae were broadened, showed no distinct intervertebral substance and blended with the remnants of the cervical vertebrae. The light area in the centre may have indicated a spina bifida anterior

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics

Stated Meeting Held December 10th, 1914

DR. WILLIAM P. NORTHRUP, IN THE CHAIR

Presentation of Cases Showing the Effect of Blood Transfusion in Purpura Hemorrhagica, Henoch's Purpura, Chronic Sepsis, Etc.—Dr. Edward Peterson presented these cases. He stated that all types of pathological hemorrhage yielded the best rusults when treated by blood transfusion, or by subcutaneous injections of human serum. Of the two methods the former had proven the more efficacious. Following transfusion there was an increase in blood pressure, in the number of cells and in the percentage of hemoglobin, and the coagulation time was shortened. Besides being hemostatic, whole blood, administered by transfusion, stimulated the hemopoietic functions and there was an increasing clinical evidence that it was also antitoxic and bactericidal. The effects of blood therapy were well illustrated by the following cases.

Case 1. This patient, 4½ years of age, was admitted to the Post Graduate Hospital on April 16, 1914, with purpura hemorrhagica. The child was normal at birth and had been well since, with the exception that he had had measles at the age of one year. A few days before admission to the hospital he began to bleed from both ears and from the nose, but not from the gums, mouth or throat. A petechial rash appeared on the feet, legs, hands and arms. Later large ecchymoses appeared on the eyelids and under the eyes, and then on the thighs and legs. There were small ecchymotic spots on the body also. The blood count showed red blood cells 4,300,000, memoglobin 68 per cent, leucocytes 16,000, polymorphonuclears 74 per cent, lymphocytes 23 per cent, transitionals two per cent, and eosinophiles one per cent. A discharge from the ear showed the B. pyocyaneus. The feces showed some blood microscopically. The child was restless, irritable and cried constantly though the temperature and pulse were only slightly elevated. A diagnosis of Henoch's purpura was made. The treatment consisted in the subcutaneous injection of 20c.c. of the mother's blood at the time of admission. Blood transfusion was suggested, and the child's brother acted as the donor. The hemolysis and agglutination tests were negative. A transfusion was done by the Lindeman method on April 18th, between 250 and 300 c.c. of blood being given. The tendency to bleed ceased abruptly and up to the present time had shown no tendency to recur.

Case 2. This was a case of mild secondary anemia following injury occurring in a male child 18 months of age, who gave a history of having had a supposed meningitis, double otitis media and bronchopneumonia. On August 15th he fell down a flight of stone steps striking the left temporo-parietal region and producing a decided lump and contusion. He was rendered unconscious but had no paralysis. Two days later he seemed drowsy, lost his appetite and vomited occasionally For three weeks he lay in a semicomatose condition; then gradually his mental condition cleared. The child was admitted to the Post Graduate Hospital on September 30, 1914. in a very relaxed and emaciated condition, his weight at this time being 16 pounds 8 ounces. The child had a double otitis media, moist rales over both lungs, an irregular temperature, albumen in the urine, but no pyelitis. The Widal reaction was negative. The blood count showed red cells 3,000,000, hemoglobin 54 per cent, leucocytes 38,000, with 78 per cent polymorphonuclears and 22 per cent lymphocytes. The boy was transfused on October 22, 1914. the mother acting as the donor. The amount given was 350 c.c. Improvement commenced with the operation and progress toward recovery had been uninterrupted. After transfusion the blood count showed red cells 4,456,000, hemoglobin 68 per cent, and the leucocytes had dropped to 12,300.

Case 3. This was a case of Henoch's purpura in a girl 11 years of age, who was admitted to the Post Graduate Hospital on May 21, 1914. Her personal and family history were negative. except that she had had measles and scarlet fever. Two months previous to her admission to the hospital she became ill with diarrhea and abdominal cramps. The latter symptoms increased in severity and was most marked in the lower right quadrant. Appendicitis or nephrolithiasis was suspected. A rash appeared on the legs, knees, hands and elbows. Blood was passed per rectum. The temperature was 102 degrees F. and pulse 140. At this time any slight trauma would be followed by ecchymosis. A little later the child had three convulsions evidently of uremic origin and the urine showed blood. There was edema of the feet, legs, face, abdomen and back which progressed until there was general anasarca. This edema had gradually disappeared until at the time of admission it was scarcely noticeable. Aside from the poorly nourished anemic condition physical examination revealed nothing abnormal except that the post cervical chain of glands, particularly on the left, were slightly enlarged. Some of the symptoms of rachitis were present. There were purpuric spots on both knees and also large ecchymoses on the left external malleolus. The left epitrochlear gland was palpable and the inguinal glands palpable and slightly enlarged. There was blood in the stools both microscopically and chemically. Blood examination showed red blood cells 3,168,000, hemoglobin 35 per cent, white cells 18,000, with 77 per cent polymorphoneuclears and 23 per cent lymphocytes. The child was given blood transfusion of 270 c.c., the father being the donor, and the preliminary tests having been satisfactory. Immediately after the transfusion the child looked and felt better. She was dismissed from the hospital on June 1st, at which time her blood count showed red cells 4,256,000, hemoglobin 65 per cent, leucocytes 11,700, with 60 per cent polymorphonuclears and 40 per cent lymphocytes.

Case 4. This was a case of chronic sepsis following pneumonia and empyena. This patient was born on October 23, 1913, and had been well until the present illness. He had had pneumonia during the latter part of July and was brought to the hospital three weeks later with an empyema on the right side. He was operated upon by Dr. Vincent at which time his weight was 20 pounds, 12 ounces. He ran a very high temperature and gradually lost weight and strength and refused food. This was followed by diarrhea which further weakened the boy. The prognosis was considered hopeless but as a last resort transfusion was suggested. A blood transfusion of 235 c.c. of blood, the mother being the donor, was given. The temperature dropped immediately and remained down. The child's appetite was ravenous. The blood count before transfusion was: Red blood cells 3,847,000, and the hemoglobin 40 per cent; today the red blood cells numbered 4,220,000 and hemoglobin was 77 per cent. Dr. Alfred M. Hess said that in the treatment of the conditions under discussion by blood transfusion, etc., a sharp distinction should be made between immediate results and permanent ones. In cases in which there was a possibility of this treatment replacing blood, stopping hemorrhage, or combating sepsis it should be used. It should be remembered that in purpura hemorrhagica the attacks were sometimes very infrequent; in one case coming under his observation there was a recurrence of the condition after ten years; in other instances it recurred at longer or shorter intervals, so that whether transfusion was of permanent value in purpura hemorrhagica remained to be seen. In one case of hemphilia in which he had seen this treatment used it did no good, the coagulation time of the blood continued to be as long as before the transfusion. In another instance transfusion had been performed three or four times and each time the hemorrhage recurred; this was a case of purpura hemorrhagica. Whether transfusion was of more than immediate value was still problematical. Dr. Hess said he had also used another method, that of defibrinating the patient's own blood and reinjecting it. This stopped the hemorrhage. In one instance this procedure had been carried out three times and it stopped the hemorrhage for a week or ten days after the serum was injected. This method had the advantage of being highly practicable; no hemolytic tests were required, no difficult technique, no donor. The injections of autogenous blood should be tried in cases of purpura with hemorrhage.

Dr. William Shannon stated that he had recently seen a case of hemoptysis and that Dr. Hess had also seen the case. The child had been bleeding for a week and the family history showed that hemophylia was a family characteristic. There was a history of rheumatic purpura and of purpura hemorrhagica, a combination of the two conditions. It seemed that in this case transfusion might be of benefit.

The Extent of Tuberculosis Infection Among the Children of New York Tenements as Evidenced by the Application of the Cutaneous Tuberculin Reaction.—Dr. Maurice Fishberg presented this communication. He recalls that a year ago he had reported as to the tuberculin test in 692 children of tuberculous parentage, among which the reaction was found positive in 67 per cent of the cases, and at the age of fourteen the proportion of "reactors" was even as high as 63.79 per cent. The report now presented was on the application of the von Pirquet test to 589 children of non-tuberculous parentage. They were all of poor economic and social status, depending on charity wholly or in part for subsistence. On the whole they were considered healthy by their parents. They lived in the tenement district of New York City. He found that 52.72 per cent showed positive reactions to the cutaneous tuberculin test. Among the children under one year of age only 10 per cent reacted; among those between one and two years of age 33.38 per cent; between three and four years of age 41.25; betwen five and six years o fage, 50 per cent; between seven and ten, 64.74 per cent; between eleven and fourteen years, 75 per cent. These figures though apparently startling were in agreement with conditions found in various European cities.

Dr. Godfrey R. Piseck said he would like to ask Dr. Fishberg whether in the families ruled out as not having tuberculosis there were any boarders or lodgers? He wanted to know whether the converse of his statement was not the more important; whether if there was no reaction there was no possibility of the child having tuberculosis (excluding terminal cases, of course). If this were true the reaction would still be of distinct value.

Dr. Abraham Hymanson called attention to an article which he had published in the Archives of Pediatrics, August 1912, on "Tuberculosis in Young Children," in which he had stated that during th eyears of 1909 and 1910 he had applied the Moro and von Pirquet test on 68 infants from two days to two weeks of age, the mothers being apparently free from tuberculosis, and none of these children showed any trace of the disease. In another series of 18 cases he had applied both of these tests, in both the infants and the mothers. Four of the mothers showed a positive reaction and three of these showed physical signe of the disease. The infants invarably showed a negative reaction. He had looked for enlarged glands in 86 infants but found none, with the exception of one infant, all of whose glands were enlarged. There was no history of syphilis in this case. Dr. O. Bondy had applied the cutaneous tuberculin reaction in 350 cases of new born infants between the second and fourth days after delivery and found the test negative in all, although it was positive in 71 of the mothers. Drs. Paten and Griemert had applied the von Pirquet test in 33 children less than two weeks old and none of them showed a trace of reaction. Other observers had made similar tests and the fact seemed to be established that with very few exceptions infants were born free from tuberculosis, but that they contracted it during infancy or childhood.

Dr. Leon T. LeWald said that he had made raidographic examinations of the lungs of many children who had given a positive tuberculin reaction and on no occasion had he found lung lesion, except in miliary tuberculosis; even when the children showed positive signs of the disease the lung was not infiltrated, but the process was located somewhere else in the body, in the bone joints, or lymph nodes, but not in the lungs.

Dr. Maurice Fishberg, in closing the discussion, said that Dr. Pisek's question was a very proper one in view of the ubiquitousness of tuberculosis. In an investigation of an isolated mountainous district in Scandinavia with a population of one hundred among whom there had not been a death from tuberculosis for ten or fifteen years, Overland found 75 per cent of the population gave positive reactions to the tuberculin test. After investigation it was found that the village teacher was a consumptive and responsible for this high percentage of infection with tuberculosis. Direct contact was not necessary to transmit the disease. This was evident from the fact that a cow which reacted positively to tuberculin, placed with a herd everyone of which reacted negatively, resulted after a few months in a considerable number of positive reactions among that herd, though there might be no well developed instance of tuberculosis. As to a negative reaction, this often meant nothing whatever. Where the reaction was positive and the disease was present it need not necessarily be in the lung, but might be in a joint, in glands, or other organs, since it was the organism that responded to the tuberculin test.

Experience with the Diphtheria Toxin Skin Reaction of Schick.—Dr. William H. Park made this presentation. He said that he had brought with him two students who had sumbitted themselves to the Schick test and showed reactions. The

Schick reaction was just the reverse of all other tests in that a negative reaction meant immunization and a positive one meant susceptibility to the disease. The Schick reaction was due to the direct toxic action of the toxin of diphtheria. The negative reaction meant that the toxin was neutralized and a positive reaction meant that the patient did not have sufficient antitoxin in the blood to neutralize the toxin introduced. There was also a pseudo reaction which was anaphylactic in type and was in reality due to the endotoxins. It gave the impression of a much more decided reaction that the true reaction. In the pseudo reaction there was slight hyperemia and infiltration at the site of the injection. To demonstrate the difference between the true and the pseudo reactions Dr. Park exhibited two guinea pigs. The one had been subjected to a double Schick test; that was, at one site an injection of diphtheria toxin alone had been given, while at a second site a similar dose of toxin together with a sufficient antitoxin to neutralize it had been administered. At the site of the first injection there was an induration, while at the site of the second injection the toxin had been completely neutralized and there was no lesion. A second pig had been inoculated with a non-virulent culture and showed the pseudo reaction which was larger than the true reaction and meant that the pig was immune. The pseudo reaction came quickly and went quickly, while the true reaction lasted for a week or two before disappearing. In applying the Schick test the dose used was about one-fiftieth of the fatal dose, though it might be as low as one-sixtieth or as high as one-thirtieth; with a larger dose there was danger of necrosis. If there was not an active antitoxin present and the reaction was doubtful the subject was put down as non-immune. Dr. Park exhibited charts showing the result of the Schick test in children from the time of birth to the fifteenth year and in adults when the toxin was administered subcutaneously, intramuscularly and intravenously. In children between the ages of five and fifteen years 50 per cent showed a positive reaction; in those between the ages of four and six years about half were immune to diphtheria and half were non-immune. In younger children 60 per cent were immune, while among adults 70 per cent were immune. In certain children "once immune always immune" seemed to hold good, while in others who had had the disease the test might be used to determine the limit of immunity. At the Willard Parker Hospital they were not immunizing all the children admitted to the scarlet fever wards, but only those that showed a positive Schick reaction. A child that gave a negative Schick test was positively safe among diphtheria carriers. Several other applications of the reaction could be made. When the toxin was given intravenously the reaction was increased. If a case was supposed clinically to be diphtheria and one got a negative Schick reaction and a positive diphtheria culture one might conclude that the patient was only a carrier and did not have true diphtheria. About one-third of the cases of diphtheria developed antitoxin while two-thirds did not. When one positive Schick reaction was found in a family it was likely that all the members of that family would have a positive test. Immunity to diphtheria seemed to be acquired. Adults and young infants gave a large proportion of negative reactions, but during infancy and childhood the immunity dropped off and then the antitoxin began to be produced again as the children grew older; they did not know the explanation of this. Some individuals produced a large amount of antitoxin; as much as fifteen units had been observed, but why it should be produced beyond the apparent need was beyond comprehension.

Types of Pnoumococcus Bacilli and Their Characteristics—Dr. Rufus I. Cole presented this communication. He stated that a study of the races of pneumococci isolated from cases of pneumonia revealed four types of organisms. They had named those groups in which a considerable number of organisms were found to have common immunological characters Types 1 and 2. The pneumococcus mucosus (Streptococcus mucosus of Schottmuller) had been called Type 3, and the group of organisms having no common immunological characters they had called Type 4, or preferably Group 4. For the past two years all organisms isolated from cases of pneumonia had been studied as to their immunological reactions. A study had now been made of the organisms obtained from 150 cases of pneumonia. The result of this study showed the relative frequency of the various types to be as follows: Of type 1 there were 37 cases, 38 per cent; type 2, 44 cases, or 30 per cent; type 3, 17 cases, or 11 per cent; type 4, 32 cases, or 21 per cent. Observations along the same lines had been made by Walker at the Peter Bent Brigham Hospital, Boston, and the Pennsylvania Hospital, Philadelphia, by Dr. Paul Lewis; altogether about 500 cases were studied. The results of these studies coincided very closely with those that had been obtained at the Rockefeller Institute. It seemed that they might safely conclude that there was one type of severe infection due to pneumococci of type 3, in which the mortality was high, a second group of cases of lesser severity, due to organisms of type 2; a third group of cases, only slightly less severe, due to pneumonococci of type 1, and finally, a large group of cases due to the non-fixed type of organisms; type 4, in which the symptoms were milder, and which usually ended in recovery. From the standpoint of prognosis alone, therefore, the determination of the type of infection in the individual case was of considerable importance. They had been studying the toxic action of the pneumococcus with the idea of getting a serum which would be efficacious in pneumonia. It had been impossible up to the present time to get any direct proof that the effects of the pneumoccal growth in the body were due to the elaboration of a poisonous substance. The speaker, after discussing the theories in regard to endotoxins and ferments in nontoxin producing bacteria, described his experience with the filtrates of cultures, which gave no specific effect; with solutions of bacterial cells, (a) in salt solution, (b) in cholate solutions, and (c) by freezing and grinding. They found that in all three instances the result was acute death of the guinea pigs and hemolysis of the red blood corpuscles. Broth cultures of the pneumococci were found to transform oxyhemoglobin into methemoglobin. They then further studied this change of oxyhemoglobin into methemoglobin, using broth cultures with living pneumonia, broth cultures with dead pneumococci, solutions of bacterial cells, filtrates of bouillon cultures and washed bacteria in salt solution in the presence of blood and a small amount of dextrose. They also studied the effect of oxygen in the transformation of oxyhemoglobin into methemoglobin and as a result of their observations concluded that for the formation of methemoglobin by pneumococci the presence of living bacteria were necessary, and since the presence of minute amounts of nutritive material was also necessary, it was probable that these bacteria must be actively carrying on nutritive functions, probably undergoing multiplication. Such substances must be present in the fluid immediately surrounding the bacteria. If the corpuscles and bacteria were separated by any limiting membrane, as by a dialyzing membrane, or even a thin layer of oil, no reaction occurred. These together with other observations made it seem possible that the formation of methemoglobin depended upon some active substance given off by the bacteria, and this substance became inactive as soon as it diffused through the surrounding medium. The suggestion then occurred that the substance given off by the bacteria was in the nature of a ferment, being rapidly weakened or destroyed by diffusion. From their observations of the transformation of oxythemoglobin into methemoglobin with reference to the effect of oxygen it seemed not unlikely that the formation of methemoglobin occurred in the neighborhood of pneumococci because of a modification of oxidation and reduction processes in the medium immediately surrounding the bacterial cells. This change must be a specific one in the case of the pneumococci, otherwise all living organisms would cause this reaction, which was not the case. This theory seemed applicable to conditions in pneumonia provided one assumed a widespread distribution of the bacteria throughout the body, but after all they had to admit that the exact nature of the intoxication in pneumonia was still obscure. In studying the action of pneumococcus immune serum they had succeeded in immunizing sheep but when they had undertaken to transfer this immunity passivly to guinea pigs their results were very questionable and they must believe that it was very doubtful whether any neutralization of the toxic substance could be obtained in this way. The experimental studies did not indicate that an immune serum obtained by the injection of toxin possessed any high degree of antitoxic power. Their studies had shown why immune serums such as had been used in pneumonia would not be likely to show any beneficial results. In the first place, a pneumococcus immune serum was effective only against the type of organism used in the process of immunization. If, for instance, immunization was carried out with type 1 organisms it would have no effect on any infection due to one of the other types of pneumococci. If the immunization was carried out with one of the organisms of type 4 it could have no effect on any infection except that due to the same race. They had lately examined an antipneumococcus serum on the market which was said to be polyvalent; their experiments had shown that it had absolutely no protective power against organisms of type 1 or type 2, or in fact, against any of the organisms against which they had tested it. Its use in the treatment of pneumonia undoubtedly did more harm than good. In order to render an antipne mococcus serum theoretically useful in any type of pneumonia, it would be necessary, first, to produce a serum with high protective power against the type of organism concerned; second to have a satisfactory method of standardizing such a serum, and last, to have a method of quickly determining the type of organism for each individual case. These conditions had been satisfactorily met as far as type 1 and 2 were concerned. As for type 3 it had been absolutely impossible to produce a serum having any protection power whatever. The use of immune serum in infections of this type was entirely without justification. Fortunately, infections of this type were relatively infrequent. Active immune serum might be produced to each of the organisms which had been placed in group 4, but the serum case was effective in protection only against the individual race used for immunization. Therefore, such a serum could not be employed with any hope of success. Infections of this type were relatively mild. The cases belonging to types 1 and 2 constituted the largest number of cases of this disease seen in New York and probably in this country. They had found a method by which it was possible to standardize immune serum with a fair degree of accuracy. They had also worked out a method by which they could determine the type of organism in the individual case in a comparatively short time. As soon as a patient was admitted to the hospital, a portion of sputum coughed directly from the lungs was obtained if possible, and, after washing, this was made into an emulsion in sterile salt solution or bouillon, and injected into the peritoneal cavity of a mouse. Cultures were made from the blood of the patient, or in case a satisfactory specimen of sputum could not be obtained directly from the involved portion of the lung, by the insertion of a sterile needle. Five hours after the injection an emulsion was ade from the washings of the peritoneal cavity of the mouse and the agglutinability tested against an equal part of immune serum of type 1 and type 2. When agglutination occurred it was usually within half an hour. On theoretical grounds it was important that the serum should be administered early, before the degree of infection was too great. When the type of organism had been determined and found suitable for serum treatment an intravenous injection of the appropriate immune serum of 80 or 20 c.c. was administered and a second dose given at the end of twelve hours. These doses were repeated the following day and on successive days as the condition of the patient indicated. This treatment had thus far been carried out in only a small series of cases, too small to permit the drawing of any definite conclusions, but the results had been extremely encouraging in pneumonia due to organisms of type 1. When the disease was due to organisms of type 2 the results had not been so satisfactory owing to differences in different serums, the fact that it was more difficult to produce a serum of high protective power, and that the maximum infective dose which may be protected against by immune serum of type 2 is smaller than that which may be protected against in type 1. t was apparent that in the actively immunized animal there was some immunity factor which could not be transferred with the immune serum. In the future study of this subject it seemed most important to learn more of this second factor concerned in immunity and to attempt to find methods for transferring it from one animal to another.

Dr. William H. Park asked Dr. Cole whether using type 1 serum might not do some good; would it not help perhaps about one-half of the cases? Of course it would do no good in a case of pneumonia due to type 3 organisms. They were often called up over the 'phone and asked in regard to the administration of vaccine in pneumonia and they had been telling inquirers not to use the serum. As to the prognosis, if one learned twenty-four hours after seeing a case of pneumonia to which type it belonged, should he be guided in prognosis by the group to which the case belonged or by the clinical appearance of the patient? For instance, if the patient had a light attack and one found that he had the bacilli belonging to the third group, should a serum prognosis be based on laboratory findings?

Dr. Rufus I. Cole said that if one was sure he had a certain type of bacilli the thing to do was to administer the appropriate serum, but in their animal experiments they had found that to be effective they had to give large amounts of serum. One might do harm with such large amounts of serum and their administration would scarcely be practical. It was not worth while trying a serum, unless one knew with which type of pneumococcus he was dealing and was sure that he was doing some good, until they had had further experience with the various types. The determination of the type was of great value in prognosis. Just yesterday Dr. Cole said he had seen a man, 65 years of age, who seemed to be in a very serious condition. The organism was found to belong to group 4 and he felt more cheerful as to the outcome of the case. In reply to the question as to how they determined the various groups. Dr. Cole said that all pneumococci were determined by the agglutination and protection tests. Any one of the types would not react against any of the other types. They made the tests by the simple method of injecting animals as he had described. In reply to the question as to whether a mixture of the sera of two groups had been found practical, Dr. Cole said they had usel an immunized horse and titered to the type used to produce the immunity; as yet type 2 showed a very low titer. If one could determine the type it was better to give the serum for that type alone.

In reply to the question as to whether he thought pneumonia was a direct infection of the lung or a hematogenous infection, Dr. Cole said that from his experience he believed that it was a direct infection of the lung. Their experiments led them to believe that more than contact played a role in infection, that there was an autogenous factor.

Dr. Park said that group 4, as he understood it, was not a group in the proper sense of the word; this group might embrace a large number of varieties of pneumococcus bacilli, and there might be some semi-saphrophytic ones. This was an important question with him as it had some relation to the present discussion in regard to subway crowding.

Dr. Cole said that in reply to the question as to whether there was any deterioration of the sera with time, he could not say as they had not kept their sera long enough as yet. Six months was the longest time they had kept any; it had not seemed to deteriorate in that time but it might do so later.

Someone had asked as to the possibility of the transformation of one type of bacilli into another; in their experience they had never seen one type transformed into another. Type 1 had passd through one hundred and twenty-five animals and remained type 1 always. Transformation might be possible but they had never observed it. They had examined the types during the various stages of the disease and during convalescence and the agglutination tests always showed the same organism. What Dr. Park had said of group 4 was true; there might be one hundred and fifty varieties, but each was an individual type and absolutely distinct. They seemed to have found two types of organisms in South Africa that had not been observed here.

In reply to the question whether a patient might have an infection consisting of organisms of more than one type, Dr. Cole said that he had never found type 1 and type 2 at the same time. If type 1 and type 4 were both present, type 1 came out and type 4 did not; type 1 was more virulent and suppressed type 4. One never got an "even up" mixture.

In reply to Dr. Kerley's question as to why the mortality was lower in children than in adults, he had made no observations along that line and had no theories to offer.

APOLOGIES.

We apologize for the lateness of the appearance of the February issue, which was due to the fact that all our galley proof and copy was lost in the mails and we had to supply new copy which caused unavoidable delay—which the Editor deeply regrets, and begs the kindly consideration of our subscription and advertising patrons.

TRANSACTIONS OF THE NEW YORK ACADEMY OF MEDICINE

SECTION ON PEDIATRICS*

Meeting of May 11, 1914. William P. Northrup, M.D., in the Chair.

Pyloric Spasm. Dr. Mark S. Reuben. This patient is the youngest of three children. The first died of inanition at the age of three months and during life presented the same symptoms as the present patient except that they were more severe and persisted until death. The child probably had a hypertrophic stenosis of the pyloris. The second child is five years of age and has always been well. This patient came to our notice at the Vanderbilt Clinic at the age of eleven weeks; at six weeks he began to vomit, the vomiting being projectile in character and taking place from five to ten minutes after nursing. Constipation was obstinate and there was a steady loss in weight. At the first examination a pyloric tumor could be definitely made out and peristaltic waves were clearly visible. The diagnosis of pyloric obstruction was made. To ascertain the nature of the obstruction Dr. Hess was kind enough to try to enter the duodenum with his duodenal tube. After three or four attempts he succeeded, thus ruling out organic stenosis and making the diagnosis of pyloric spasm possible. Three hours after a nursing we were able to obtain 4 or 5 ounces of rancid stomach contents. An x-ray of the stomach showed delayed transmission of food. The infant was kept on the breast alone for four weeks, the intervals between feedings being three hours. Under this treatment the infant continued to lose in weight and all the symptoms persisted. An analysis of the stomach contents at this time showed a combined acidity of from 115 to 85, and no free hydrochloric acid. By weighing the infant before and after nursing we learned that he was getting from 4 to 5 ounces at a feeding and examination of the milk showed it to be of good quality. In spite of the fact that the breast milk was sufficient, after four weeks trial on the breast alone, we instituted complementary feeding, with the addition of 2gr. sodium citrate to every ounce of milk used. Immediately the child began to gain in weight and all the symptoms subsided. A pyloric tumor could no longer be felt and the peristaltic waves were no longer visible. The retention in the stomach gradually diminished and at present only about 1 ounce of stomach contents could be aspirated three hours after feeding. The combined acidity continued to be from 100-85 and now a trace of free hydrochloric acid was present. The points of interest in this case are: 1. There were two cases of pyloric obstruction in one family, both males; in one case the obstruction was of a high grade and led to a fatal termination, while in the other it was mild and led to speedy recovery. These cases lend proof to the theory of Dr. Holt, who, I believe, is of the opinion that in all these cases there is a real stenosis and that spasm is a superimposed phenomenon, but that the stenosis varies in degree in different cases. 2. The almost immediate improvement when complementary feeding was instituted. 3. The disappearance of pyloric tumor when the child began to gain. 4. The persistence of the high acidity even when the infant was doing well, proving that the spasm was not due to the high acidity. 5. An x-ray of the stomach taken when the infant was doing well still showed much delayed transmission of food. Therefore too much reliance should not be had on the x-ray findings in these cases but rather more on the clinical phase.

Congenital Hypertrophy of the Left Half of the Face in a Boy Seven and One-half Years of Age.—Dr. Sara Welt-Kakels. The patient comes from healthy parents with no consanguinity, no history of lues or tuberculosis. There is another child, a girl two and one-half years of age, perfectly well. The patient was born at the end of a normal pregnancy; at birth the deformity of the face was noticed. The child was otherwise well developed. There was nothing abnormal in regard to dentition, time of walking, or of talking. The patient had whooping cough in his third year and measles when he was five and one-half years of age. He had occasionally suffered from sore throat, but has otherwise enjoyed good health. The facial hemihypertrophy has retained its initial proportions in relation to the right half of the face. The child is attending school and is one of the best pupils in his class At present the enlargement of the left half of the face is mainly in the lower two-thirds, not only the soft parts, but also the bones being involved. The enlargement of the cheek is most prominent; the upper and lower lips of the same side are very much hypertrophied; the left angle of the mouth is drawn downward; the left nasolabial fold is effaced; the left half of the nose is larger; the skin over the affected side is normal; there is no hypertrichosis, or coarseness of the hair; in the malar region is a small telangiectasia about a quarter of an inch in diameter, surrounded by a small pigmented area. The action of the facial muscles is somewhat interfered with by the hypertrophy, but he can frown, laugh and whistle. There is a slight diminution in the response to the faradic current. There is no disturbance of sensibility or of the special senses. The examination of the eyes reveals nothing abnormal. The vasomotor symptoms are absent; but sometimes there is salivation, seemingly from the left side. The mouth was mostly kept open, the left half projecting. The left half of the upper lip forms an ectropion. Very conspicuous is the appearance of the tongue, which is said to participate only in the congenital and not in the acquired form of facial hemihypertrophy. The point of the protruded tongue deviates to the right: its left half is easily four or five times larger than the right half. The left papillae filiformes and fungiformes are very much enlarged. The left half of the hard and soft palate, the left tonsil, and submaxillary gland are also involved. On the inner surface of the left cheek, along the closure line of the teeth are a few small tumors of about pea size. Like the cheek they gave the impression of lipomatous growth. The left upper jaw is very much enlarged and thickened, especially in its alveolar portions. The teeth are irregularly inserted. The left half of the lower jaw is also enlarged, but to a slighter degree. The boy is otherwise fairly well developed. The thoracic and abdominal organs were normal, and the Wasserman reaction was negative. The reflexes are normal and there is no other asymmetry of the trunk or extremities. His intellect is good.

---

*From Amer. Jour. of Obst. and Dis. of Women and Children.

Dr. M. M. Stark.—In view of the fact that the lipomatous tissue of the cheek and upper and lower lips is the seat of the maximum "giant" growth, exhibited in the very interesting case, it has seemed to me that this enormous hypertrophy is not without surgical possibilities, even though it is quite possible that subsequently, and after a long while, our initial result may have to be revised. That is to say, this being a case of local giant growth, it is quite possible, that even should some of the excess tissue be now removed, as it is proposed soon to do, there may be, in time, a re-growth of this tissue, again calling for its plastic removal. It is proposed to remove in several sittings enough of the excess tissue to give us for the present, and I hope for a long time, a good cosmetic result.

As Dr. Welt has said, all the histological elements in the region of the hypertrophy are involved in the giant growth. Now then, should at any time the bony structures take on extraordinary growth, any attempt at plastic correction would then be out of the question.

The Rontgen Ray as a Diagnostic Help to the Pediatrist. Dr. L. E. LeFetra. The value of the x-ray as an aid to diagnosis in surgical conditions that involve the bones and joints is too well known to require comment, while in abdominal and chest conditions in adults it has become a part of the routine of every large hospital and results have been gratifying in proportion to its greater employment and to the wider experience of the operators. In children the use of the x-ray in fractures, dislocations, rachitis, chondrodystrophy, tuberculosis and syphilis is thoroughly appreciated but there are also certain medical conditions in which the x-ray makes an early and positive diagnosis, which would not be possible otherwise, of which I wish to speak. I will consider only such conditions as have come under my personal observation. Enlargement of the thymus gland has been found several times simply as an incident of thoracic examination when there was no cause to suspect it. Moreover the frequent fallacy of percussion in the diagnosis of the enlarged thymus has been demonstrated by the x-ray. In several instances plates taken for the purpose of showing the extent of an empyema have revealed a foreign body in the bronchus as the cause of the broncho-pneumonic abcess in empyema. This has directed the treatment along proper lines and proved life-saving. For the detection of abcess of the lung and for determining the extent of empyema and also in the early diagnosis of pneumonia the x-ray has proved of the greatest value. In pneumonia where it was impossible by physical signs to localize the disease, the x-ray has shown with great delicacy the beginning of consolidation in most cases.

Pneumothorax is another condition which is most beautifully shown by the x-ray, and the plate may confirm or make a diagnosis otherwise unsuspected.

In miliary tuberculosis the x-ray and the Von Pirquet test have transferred the diagnosis from a region of suspicion or conjecture into a realm of certainty. In addition to the miliary type of tuberculosis of the lung two other varieties have been shown, one apparently a tuberculous bronchopneumonia without consolidation, and the other a tuberculous pneumonia or bronchopneumonia with marked consolidation. Often unsuspected cavities have been found, usually near the apex and in very young infants.

For the diagnosis of pericardial effusion from cardiac enlargement the x-ray is of the greatest service, and also in showing us the best place for puncture of the pericardium. It also enables one to follow with greater accuracy the increase or diminution in the amount of pericardial fluid.

In the study of the alimentary canal the x-ray gives valuable information in regard to the stenosis of the esophagus, especially where this is spasmodic or cicatricial and it may also be of value in regard to stenosis of the pylorus, with regard to kinks in the intestine, or to the presence of megacolon. With reference to pyloric stenosis I think the x-ray is not at all essential and is often misleading.

For the diagnosis of early bone syphilis and for the differential diagnosis of syphilis from scurvy, and of syphilitic bone disease from tuberculosis bone disease, particularly in cases of dactylis of epiphysitis, the x-ray is of the greatest value.

An Application of the Rontgen Ray to Infant Feeding.—Dr. Charles Hendee Smith. Radiography has several applications to infant feeding. The size, shape and position of the stomach, its emptying time in health and disease, the effect on the emptying time of different foods, the proper amount of food and the interval of feeding have all been studied with Rontgen ray, and valuable information has been obtained. The point which I wish to bring to your attention has to do with the management of the infant, and with the way in which food is given rather than with the exact composition of the food.

The teaching of doctors and nurses for many years has been that the child must be kept at the breast or bottle for twenty minutes, must then be held in a perfectly horizontal position, and be put to sleep at once without change of position. Many mothers do not follow this plan, but let the child take his food in a longer or shorter time than twenty minutes, hold him up against the shoulder after feeding, or prone across the knees, or trot him up and down in the sitting posture; finally after an interval putting him to sleep. One of these plans must be more desirable than the other. The posture of the child after feeding is of importance because of its relation to vomiting, colic, sleep, and general health.

The way in which posture can effect digestion depends first on the anatomy of the stomach. Radiography has shown the fallacy of the older idea that the stomach in infancy is vertical in position. The cardiac orifice of the stomach is held firmly to the posterior abdominal wall. The fundus lies in the left paravertebral groove, on the diaphragm, spleen, tail of the pancreas, kidney, and mesocolon, reaching a plane considerably posterior to the cardia, since the vertebrae project forward some distance into the abdominal cavity the pyloric end of the stomach is also pushed forward by the vertebrae, the head of the pancreas and the duodenum, and lies in contact with the anterior abdominal wall and liver anteriorly. The pyloric opening is directed backward to the duodenum, but lies in a somewhat more anterior plant than the cardia. There is therefore an obliquity of the long axis of the stomach from behind forward and to the right, as well as from above downward and to the right. The most posterior part of the stomach is the fundus, the most anterior that part of the body just to the left of the pyloric antrum. The cardiac opening is nearer the most posterior plane reached by the stomach than it is to the most anterior. The second factor in regard to posture is that there is a certain amount of gas in the stomach of every individual. Practically every radiograph taken in the erect position shows a bubble of gas in the fudus end of the stomach. In the prone position it is not possible to estimate accurately the amount of gas present.

The gas in the stomach may be derived from three sources, swallowed air, gastric fermentation, and intestinal gas. Gastric fermentation was rare and was only an important source when there was stagnation from obstructed pylorus or from gastric atony of extreme degree. Intestinal gas does not commonly pass back into the stomach Swallowed air accounts for the gas in the stomach in the majority of cases. This takes place constantly. Air is constantly present in the pharynx and is forced down with the food at the time of each swallowing act. It is often possible to hear a child gulp down air with each swallow of milk. More or less air may be swallowed with saliva or nasal mucus between feedings. Tongue suckers, thumb suckers, and babies with "comforter" habit suck and swallow air during a considerable part of their waking hours. The behavior of liquid in the stomach is not different from that in a glass bottle or other receptacle. If the child is held in a horizontal position the liquid gravitates to the posterior part of the stomach, that is to the fundus and forces the gas to the anterior part of the fundus and to the right end of the body of the stomach and pyloric antrum. Since the cardiac orifice is situated well back, against the vertebral column, it follows that it will be covered by the liquid and that the gas cannot escape into the esophagus It can only escape through the pylorus, if at all. If the amount of food plus gas is enough to distend the stomach either food or gas must be forced out through the pylorus or food must be regurgitated through the esophagus until the tension is relieved on the stomach wall. This can be readily imitated by taking a bottle two-thirds full of liquid. When held on its side no air can escape through the bottle mouth. held upright the gas can escape with ease if under pressure. When the child is held upright the liquid gravitates at once to the dependent part of th stomach, displacing the gas to the highest point, that is the fundus, thus making it possible for the gas to escape by way of the esophagus. This often takes place as soon as the child is held erect

Dr. Smith exhibited x-ray plates showing what happened when a child was fed and placed in the ordinary horizontal position. The milk in the stomach gravitated to the fundus and displaced the gas to the anterior portion of the stomach. The esophagus showed plainly as the child regurgitated food during the exposure. It was perfectly evident that no gas could possibly escape from the stomach until enough milk had been vomited to uncover the cardiac orifice of the stomach. The child was then held erect and the second exposure showed the effect of gravity on the stomach contents, the milk having gravitated to the dependent part of the stomach, the gas to the upper part, and it was not possible for it to escape. After the exposure the child was patted rather forcibly on the back and eructated gas. After ten minutes another exposure showed that the stomach had lost all its gas except a small bubble just at the cardia, and the stomach had contracted down on the milk and small amounts of bismuth had passed into the small intestine.

The horizontal prone position is better than the supine, because the liquid food gravitates to the anterior part of the stomach and forces the gas to the posterior part. This is perhaps why so many infants sleep better on their stomachs than on their backs. This is shown by a second series of radiograms.

The effect on the stomach of extreme distension seen in some cases must be unfavorable to digestion. The peristalsis can take place only with great difficulty, and it seems as though there must be interference with the secretion by pressure on the mucosa and the blood-vessels. The symptom "colic" is probably due in many cases to painful gastric distension, as well as to painful peristalsis. The frequency with which colic accompanied regurgitation is suggestive of their common origin.

The instinctive posture which many mothers assume when not taught otherwise by nurses or doctors, when they hold the baby up against the shoulder after nursing, is the one in which the baby can most easily get rid of this undesirable swallowed air. Patting on the back and slight pressure on the epigastrium may assist in the process of expulsion of gas. At times the eructation may be violent and the contraction of the stomach so forcible and rapid that a small amount of milk may come up with the air. The amount of regurgitation in such instances is negligible compared to the comfort given the baby. Very feeble babies often vomit whenever put down on their backs, the cardiac sphincter seemingly having no power. In some such cases this may be stopped by constantly keeping the basket or bed at an angle of about forty-five degrees, and never allowing the child to assume the horizontal position. The inverted position for nursing which has been suggested as a remedy for vomiting can have no influence except an unfavorable one on this form of vomiting. The horizontal position is, of course, not the only cause of vomiting; other causes must be eliminated in rder to attain success by the postural treatment.

It is my belief that it is better for a child to take a feeding too rapidly than too slowly. Rapid nursing may choke the baby, cause coughing, gagging and vomiting, if the pharynx fills too rapidly, while slow feeding on the other hand, multiplies the number of swallowing acts and increases the amount of air taken. In nursing from very full breasts it has been shown that an infant may take 50 per cent. of the milk in the first two or three minutes, 75 per cent. in the first five minutes, and after that the amount per minute increased rapidly. Such infants showed no more signs of discomfort or indigestion than others unless they stayed at the empty breast sucking and swallowing air. Except in the case of feeble infants there is no good reason why a feeding might not be taken in five to ten minutes, and at most in fifteen rather than the traditional twenty. This is quite contrary to the usual teaching. Experience shows that the holes in a nipple must be made very small indeed to prevent a strong child from emptying it in ten minutes. It was much better to have four or five large holes so that the milk ran freely and to allow the baby to regulate the time himself. Puny infants sometimes became so discouraged from the effort of getting milk from a nipple with small holes that they refuse the bottle.

The writer has been testing this plan for six years and has yet to see a case of simple regurgitation which could not be relieved by these means. The teaching in practically all training schools for nurses has been that the baby should be kept in the horizontal position after nursing and must on no account be held up or moved about. During the past six years I have met only three nurses who had evolved their plan of holding the baby erect as a routine. Nurses train mothers now-a-days. The inexperienced mother takes the word of the trained nurse as law, and when a doctor and a nurse disagree, the doctor must have unusual influence over the mother to have an even chance of having his ideas carried out. In many hospitals the babies are fed and allowed to lie without changing their position all day. This is a very bad practice. Dr. Northrup pointed out years ago that it was lack of holding in a mother's arms that made many babies do badly. Dr. Smith concluded that (1) regurgitation, colic and indigestion depend not only on the food but on the manner in which it is given and the posture of the child between feedings; (2) the food must be of propor composition and of proper amount. It should be given at as long intervals as possible, depending on the gastric capacity and the total amount of food required per day; (3) a feeding should not be taken too slowly, five to ten minutes being long enough and fifteen minutes being the maximum time; (4) the child should be held upright before feeding to get rid of any gas in the stomach. If air is swallowed in large quantities it is often necessary to interrupt the feeding one or more times holding the child erect until the air has been expelled. Immediately after the feeding the child should be held upright against the mother's shoulder and givn the opportunity to eructate gas; (5) the child should be placed in his bed preferably in the prone position with the head of the bed somewhat elevated. This routine may be followed with every child even though he does not regurgitate. Habitual tongue suckers have to be held up sometimes between feedings.

The Rontgen Ray and Pneumonia.—Dr. Howard H. Mason gave a lantern slide exhibit showing what the x-ray revealed in pneumonia. A number of the slides showed the correlation between th beginning of physical signs of pneumonia and the appearance of the shadow showing the beginning of consolidation. Other plates showed that with the disappearance of physical signs of pneumonia the shadow of consolidation cleared up. The x-ray has shown that when a lung clears it seems to clear equally all over and not from within outward or from without inward. Quite a change in the shadow is often noted within twenty-four hours. In all the early cases before the lung consolidated there was just dulness, but when consolidation extended to the larger bronchi one got all the signs of pneumonia, bronchial breathing, rales, etc. Still other plates showed that in broncho-pneumonia the shadow was not in any way comparable to that of lobar pneumonia.

Discussion on Dr. Mason's Paper.—Dr. William P. Northrup. I would like to ask Dr. Mason whether in the old-fashioned so-called central pneumonia it was an undiscovered marginal lobar pneumonia that we had?

Discussion on Dr. Mason's Exhibit.—Dr. Howard H. Mason. I believe it is like the case shown, usually in the region under the scapula and difficult to make out. There are dulness, breath sounds, and a few rales, but no bronchial breathing.

Dr. William P. Northrup.—I am reminded of a case in my practice in which the child had a high temperature and slight stupor, in fact all the rational signs, but no local physical signs of pneumonia. The patient recovered by crisis and went on living. I had competent men in consultation with me and they all felt chagrined that they could find no local signs of disease.

Discussion on Dr. Mason's Demonstration.—Dr. Ward Bryant Hoag. Why is there so much consolidation shown in lobar pneumonia while in typical pneumonia with high temperature, rapid respirations and bronchial breathing the x-ray does not show such marked shadows? In one case which came under my observation in which there were no physical signs on the sixth day, Dr. Kerley was called in consultation and he could make out no physical signs. On the seventh day we did not take the sounds, but on the eighth day the child began to show physical signs and the first attempt to take the sounds with the stethscope revealed the lesion and that same night the child's temperature fell from 106 degrees to 96 degrees Fahrenheit.

Dr. I. S. Hirsch.—In regard to the difference between bronchial and lobar pneumonia I do not quite agree with Dr. Mason. It is the general eonsensus of opinion that the pulmonary markings are due to lobar pneumonia to the blood vessels passing from the hilum to the periphery; the veins, arteries and capillaries all take part and the density is due to the congestion of the blood-vessels. The bronchi in the x-ray picture seldom show except at the hilum and then but slightly in contrast to the thick shadow at the base. In pneumonia there are small spots showing the infiltration in the air vesicles. In all bronchial pneumonias there is a tendency to confluence and these small spots tend to coalesce. In lobar pneumonia there is an even density during the hepatization and that serves to differentiate the lobar from the bronchial forms of pneumonia.

Dr. William P. Northrup.—It is most illuminating to see what has been unearthed by the x-ray. In the Presbyterian Hospital Dr. Mason had a case of tuberculosis meningitis in which the lungs showed no signs whatever of tuberculosis and yet the x-ray showed the lungs studded with miliary tubercules. The x-ray has certainly brought us a new and valuable aid in dealing with children's diseases. In this case just referred to at autopsy all the areas that the x-ray had indicated as affected were found to be involved.

Miliary Tuberculosis of the Lungs.—Dr. I. S. Hirsch. It is eminently proper that a physician should have read the paper on the value of the Rontgen ray as a help in diagnosis since the x-ray specialist might be suspected of allowing his enthusiasm to run away with him.

The slides exhibited demonstrated instances in which the x-ray had revealed the location of a foreign body in cases when there were no signs or symptoms that pointed to a definite localization. A rontgenogram was shown in which a nail in the bronchi was so lodged that it was very difficult to remove. The fluoroscope was sometimes more useful than the bronchiscope in effecting the removal of such an object.

In regard to the bronchial lymph nodes, the x-ray does not show these unless they are markedly enlarged. In some instances where the x-ray showed no enlargement the lymph nodes were found enlarged at autopsy and in others where the x-ray had seemed to show enlargement there was none.

Other rontgenograms illustrated cases in which the x-ray had made the diagnosis of miliary tuberculosis where the physical signs and symptoms had not been sufficient to warrant the diagnosis and cases in which a suspected miliary tuberculosis was conformed by the x-ray.

Rontgenograms Illustrating Birth Fractures and Artresia of the Esophagus. Dr. Edward D. Truesdell. The first slide shown illustrated artresia of the esophagus. The baby from whom the pieture was taken was a full term child. When he came to nurse he had peculiar attacks of choking and cyanosis. The child was looked over carefully but we could make no diagnosis until an attempt was made to pass the catheter into the stomach. This could not be done and the x-ray showed the catheter in the blind pouch which ended at the bifurcation of the trachea and the cricoid cartilage. The second plate showed an exactly similar condition. Pressure deformities with birth fractures of the skull were shown. They had never met with a fissure fracture, all the fractures being depressions similar to the depressions made by pressure in a ping-pong ball. Illustrations were snown of microcephalus, with the receding frontal bone and irregularities of ossification and also illustrations of tardy ossification. Dr. Truesdell said he had seen ten birth fractures of the clavicle, but these showed no particular feature. Several of them were bilateral but in all union took place. They usually put them up in a figure of eight or a Velpeau bandage. Of particular interest as showing what nature could do in the restoration of these injuries was a series of plates showing an angular deformity of the humerus resulting from a fracture without displacement. At the end of two weeks there was firm union but a marked angular deformity. Successive plates showed the angulation becoming less and less, and at the age of two years the humerus was practically normal. The same thing has been shown to occur in other instances. Other plates showed fracture in cases with Erb's paralysis, fractures of the femur and syphilitic periostitis.

Thymus Obstruction.—Dr. Frederick M. Law. The first plate was taken fifteen minutes after death and the condition was confirmed by autopsy. The child had been operated on for cleft palate, the operation lasting one-half hour. The child was returned to bed and six hours after the operation was all right. The nurse observed him at that time and turned to care for a child in the adjoining bed. A few moments later she looked at the child and he was dead, having died without a struggle. The plate shows the enlarged thymus holding down over the heart. This was a case of status lymphaticus.

A second plate also showed an enlarged thymus.

Types of Infant Stomach.—Dr. Leon Theodore LeWald. The first plate exhibited showed an intussusception in an infant. The exact location was not apparent from the physical examination as the tumor could not be made out. The x-ray showed the precise location of the intussusception so that the incision could be made directly over it, and on inspection the intussusception was found to be exactly where the x-ray had indicated.

Dr. LeWald exhibited a number of rontgenograms showing the variations in size, shape, emptying time and the amount of gas in different stomachs of infants. The supreme test of stomach function in infants as in adults is the emptying time. Even peculiarly shaped stomachs are able to empty themselves in a reasonable length of time. The x-ray was sometimes a positive help in making the differential diagnosis between pylorospasm and pyloric stenosis, and in deciding whether an operation was necessary or not. The rontgenograms from one case showed a small amount of food passing the pylorus. This case went without operation and got well. On the other hand, in another instance it was found that nothing had passed the pylorus in twenty-five minutes and even at the end of an hour nothing had passed and it was decided that operation was necessary.

Two illustrations of congenital syphilitic stomachs were shown. Both children gave a marked Wasserman reaction. In one of these cases there was a cicatricial area in the lower half of the stomach and an enteroanastomosis was done. The child did well for about a week when she began to vomit and another x-ray examination gave the clue to the trouble. The esophagus was found to be very much dilated on account of the small cardiac pouch and by feeding small quantities of food the child finally recovered.

Rontgenograms taken two years or more after operation for congenital pyloric stenosis showed the food passing through the gastroenterostomy opening. If one can decide on the proper cases for operation one need not hesitate to operate since the results are shown to be very satisfactory.

PEDIATRICS

VOL. XXVII MARCH, 1915 No. 3

EDITORIAL

LITTEN'S SIGN AS AN AID IN THE DIAGNOSIS OF THORACIC DISEASE

It is now some years since this interesting phenomenon was first called to the attention of medical men. It has stood the test of time as being under certain circumstances of unquestionable clinical worth. To elicit it the patient should be upon his back, with the thoracic muscles relaxed. arms at the sides and knees somewhat elevated. As a rule the feet should be directed towards the source of light. This rule is not invariable, for the sign, if well-marked, can be seen when sufficient light is present from whatever direction; it may be even noticed occasionally when the patient is standing. But for the great majority of cases the posture mentioned is the only suitable one. The best light is bright daylight. though a good lamp held over the knees sometimes serves equally well. The patient is directed to take a deep breath. As the diaphragm descends in inspiration and the diaphragmatic separates from the thoracic pleura, a horizontal wave (i.e. horizontal to the patient when erect) descends along the thorax from the sixth or seventh to about the tenth or eleventh rib, returning (though less perceptibly) as the diaphragm returns. The phenomenon is often more marked on the right side, but if visible on the right it should also be visible normally on the left.

When the sign is positive, the indications are generally speaking, two: first, that the pleurae are not adherent; second, that the lung is expanding normally. The former fact excludes chronic pleurisy with adhesions, and also pleurisy with effusion; which latter excludes all diseases of the lung substances proper which would obstruct its expansion, i.e., acute lobar pneumonia, chronic fibroid pneumonia and advanced emphysema. In moderate emphysema the "shadow" will be restricted in its movement but not absent, except over the anterior half of the thoracic outlet.

The limitations of the value of Litten's sign are rather grave, unfortunately, but not grave enough to prevent its being often of substantial value. A bad light makes it impossible to see it. A stupid or unconscious patient, or a small baby cannot be made to breathe properly. Acute pleurodynia or intercostal neuralgia will make the patient often unable to breathe. The thoracic breathing of women often obscures the sign, the diaphragm in such cases moving imperfectly or not at all. Ascites, tympanites, a large adherent liver, or a large neoplasm in the abdomen will mechanically prevent the descent of the midriff. Counting out these exceptions, the sign will be found worthy of confidence. In insurance examinations it ought to be made one of the stock questions, as candidates for insurance are, presumably, healthy and intelligent men. In normal boys and girls it is rare to find it absent, and old pleurisies can often be discovered thus in a moment.

THE MEDICAL ASPECTS OF THE SECOND DENTITION

It has been wisely pointed out in a recent paper, that interest in the second dentition should not be confined to the dental surgeon alone, but shared by the medical profession in general. Dr. Hubert Armstrong, writing in the Liverpool Medical Chronicle, reminds us that calcification begins in the case of the first permanent molar during the twenty-fifth week of embryonic life, that the final eruption of the "wisdom-tooth" does not take place until early adulthood, and that a sound dentition is one of the essentials to good health. It has been noticed that one of the most prevalent dental defects among young people is caries or alveolar abscess of the first molar which appears at the sixth or seventh year. As this tooth does not displace one of the previous set, parents often make the mistake of supposing that it belongs to that set, and allow it to share in the neglect which their temporary character too often brings upon them.

Many of the influences which cause delay or defect of the first dentition, operate also in the second. Thus rickets, although usually outgrown by the time of the second dentition, may delay it or by the overgrowth of the jaw characteristic of the disease may occasion malposition of the teeth, and entire absence of one or two from this same cause is not unrecorded. Cretinism may also retard the advent of the second teeth to a marked degree.

As to the influence of syphilis, Dr. Armstrong has been unable to establish to his satisfaction that the accelerating influence noticed in the first dentition is continued through the second. The so-called Hutchinson's teeth, the upper central incisors with the crescentic hollowing of the edges, he has found in about fifty per cent of syphilitic children under his observation. He calls attention to the fact that this deformity may be caused by other diseases than syphilis, and that so great an authority as Hencoh attributes it to rickets instead. Dr. Armstrong brings forward an argument, which ought not to be needed, against the practice once so frequently resorted to, of exposing young children to infection of the exanthemata in order to have them "get it over." These early attacks may cause the germs of the teeth to suffer such nutritional changes as to lead to their destruction and the consequent absence of the corresponding tooth. At a later period acute illness does not apparently inhibit the eruption of the teeth. Deformities of the teeth result from the thumb and finger sucking, and the milk teeth should be cared for not only in their own interests but in that of their successors, since alveolar abscesses in connection with the deciduous teeth interfere with the follicle, and if the first teeth are extracted too early the first molar travels forward and leaves no room for the second bicuspid.

The second dentition should normally be accomplished with few if any symptoms beyond the loosening and dropping out of the first teeth. When the remnants of these are incompletely detached, they become a source of trouble and sometimes of serious ill health. They furnish a lodgment for particles of food, and cut into the cheek, promoting the formation of septic ulcers. The effect upon digestion and health of the presence of such poisonous matter in the mouth is easily imagined, and necessitates the overcoming with promptness of that reluctance to having a tooth pulled which seems inherent in human nature.

THE INFANT'S ABILITY TO DIGEST STARCH

The infant's ability to digest starch is a subject which Dr. Thos. S. Southworth of New York City (1) discusses and agrees with Finkelstein as to the disturbing effects of carbohydrate sugars on the intestinal functions of infants, but goes further in attributing these untoward results partly to fats. He reviews the historical and clinical evidence supporting this as well as the usefulness of starch in counteracting such efforts. He says it is time to ask ourselves seriously why it has been empirically found that cereals in the form of boiled and therefore gelatinized starch should have become an essential in the final composition of such diversified types of feeding as diluted cow's milk, fat-free butter-milk, whey, modified milk and malt soup mixture. It would seem that starch has a protective action against the undesirable effects of fat in milk. Starch and dextrin less rapidly undergo acid fermentation than some of the sugars and they also excite a prompt and long continued secretion of pancreatic juice which is the opposite to the action of fats. While the practice of giving all the carbohydrates in the form of sugar frequently causes overtaxing of the upper intestine the slower conversion of starch spreads the process of absorption over a greater length of intestine and this must have its influence. In conclusion he says the indication for the use of starch appears to be in those suffering from digestive and nutritional disturbances. In such its chief end is not solely to nourish the infant but to also promote nutrition by making possible a more orderly digestion and absorption of the main nutriment—milk. It is admitted, of course, that excessive use of starch may itself cause digestive disturbance but instances of such abuse do not preclude its judicious employment.

---

(1) Journal A. M. A.

PEDIATRICS

ORIGINAL ARTICLES

SYPHILIS IN CHILDREN*

BY W. C. HOLLOPETER, A.M., M.D.
Philadelphia

The literature of syphilis has grown within the last few years so enormously, especially since Ehrlich's epoch-making discovery, that each day brings out some new phase in the recognition and treatment of this distressing malady. The periodical and society contributions, however, have been largely devoted to the adult manifestation of the disease. With but few exceptions we have been unable to find any reference to the disease as expressed in children in any of our state society contributions for the last ten years. The frequency of syphilis in children, as well as the attitude of the investigator, varies, no doubt, in different cities of the world. Statistics are not always reliable or interesting study and only in comparison with other chronic troubles do they become valuable. Still, of London, cites a report in 1904 of King's County Hospital. Out of 4,830 outpatients, where children under ten years are seen and where fully a third are under two years of age, there were only twenty-nine cases of congenital syphilis, i.e., less than one per cent. These figures include only cases in which the presence of syphilis was established beyond dispute; but even when doubtful cases are included the proportion is not above one and a half per cent. The statistics of American writers give a somewhat larger percentage. However, such figures furnish us very little idea of the extent to which the inheritance of syphilis damages society; to estimate this it would be necessary to have some record of the number of children who fail to reach live birth, or die very shortly after their birth, as the result of the luetic poison. Some idea, perhaps, of this early mortality among the children of infected parents, to quote from Dr. Still's article, may be gained from the following figures in which only those stillbirths, miscarriages and early deaths are included which immediately preceded or followed, or formed part of a series immediately preceding or following, the birth of the patient in whose family history they occurred; there were thirty-nine stillbirths, thirty-six miscarriages, and twenty-five deaths attributable to congenital syphilis in the family histories of one hundred children who were under treatment for congenital syphilis; moreover, of these eighty-seven children thirteen died while under observation.

---

*Read before the Section of Medicine of the Medical Society of the State of Pennsylvania, Pittsburg Session, September 22, 1914.

To this large mortality we can add a much larger list of defectives, mentally and physically, which society must accept. In this brief paper I do not wish to include acquired syphilis, which is much rarer than the hereditary type, yet the infection of a child at birth, or early childhood, is not unusual as I have seen several in my service in the Philadelphia General Hospital. The symptoms of congenital syphilis are so well known to you all that it seems to be a work of supererogation for me to outline them ever so briefly before this audience, yet, lest we forget, I feel that the classic writings of Diday, Fournier, Hutchinson, Morrow and Gross still possess all the essentials of the symptomatology of the disease, yet for our day and generation we have grown to see the marks of the beast mirrored in different constitutions, refined and attenuated throughout years of physical and mental culture so that the virus would express a varied picture. It goes without much argument that congenital syphilis is not always recognized at birth. Frequently we find no signs at all during the first weeks of life—none to attract our attention, yet, it is most likely that manifestations are present more often than some writers have implied.

A history of coryza or snuffles from birth is gained very much more frequently when we are looking for it than would be imagined. Still reports eleven per cent in a service of one hundred, as far as possible consecutive, cases of congenital syphilis under his own observation, and this appears to be substantiated by careful inquiry of others. I am certain that the lesions in the fundus oculi, which are frequent in congenital syphilis, are intrauterine in origin, therefore present at birth. Many cases, possibly two per cent of the cases I have seen, had eruptive manifestations—the true syhpilitic pemphigus, when the child was born. The most embarrassing condition to the physician is the fact that congenital syphilis is frequently delayed in its expression, a fact which is alreády well known to all syphilographers. I recall the case of a young boy of eight years who came to me suffering from an acute synovitis of the elbow joint; he gave a history of a recent slight traumatism, but no signs of lues were visible or even suspected until he complained of his eyes; an examination, however, revealed an interstitial keratitis, which a course of mercuial treatment soon cleared up.

We have all come to regard "snuffles," however inelegant the term may seem, occurring in a child under three months, as the most constant symptom of inherited syphilis. This type of coryza was undoubtedly present in three-fourths of all of my cases, yet I feel that this is a symptom which is very difficult to determine in any particular case, especially during a household epidemic of influenza, and this actually does occur quite frequently in the autumn and winter months in our city. A simple or influenzal coryza giving rise to obstructed respiration is common enough in infants who have absolutely no taint of syphilis. Again, as is well recognized, adenoids are formed very frequently in quite young children, especially those of debilitated parentage, and children thus afflicted frequently have running at the nose and embarrassed respiration. It is a matter of extreme difficulty to make a discriminating diagnosis between adenoidal and syphilitic snuffling in a baby a few weeks old. If congenital syphilis is not recognized by its coryza in a child before the third month this symptom will most probably fail us. My experience has been that the coryza never lasts much longer than six to eight weeks and passes away frequently without treatment. Nasal deformity is the exception.

Laryngitis, shown by a hoarse aphonic cry, in very young children is frequently found both with and without the coryza, and is strongly suggestive of syphilis. I have found it present in many cases without any signs of snuffles. Laryngitis occurs later than coryza; if it occur at all it will be after the third or fourth week. I do not regard laryngitis alone as a valuable diagnostic symptom unless it remain unchanged for some weeks.

An important early symptom which is frequently overlooked in infants under three months is the "pseudoparalysis" of one or more limbs. The youngest child in which I have recognized this condition was four weeks, and the oldest was five months. Still says it was present in eleven per cent of his cases. This is undoubtedly an acute epiphysitis, which gives rise to the loss of power due to pain upon movement of the affected parts. Unquestionably, cases are seen, in which, although there is apparently no swelling or local pain, we have loss of power and rarely any suppuration and the function is quickly restored under specific treatment.

The formation of craniotabes, a name given to the formation in the skull of small islands of thin bone distant from the sutures, has now been assigned to congenital syphilis. The true etiology of this formation has been arrived at by Lee and Barlow, who found this condition to be due to syphilis in forty-seven per cent of their cases. I have always regarded craniotabes as an association of rickets, especially in that type of rickets associated with the neurological balance known as laryngismus stridulus, and in those particular cases where the stridulus rapidly improved under antirachitic treatment.

It does not seem difficult to recognize the various skin manifestations of tardy hereditary syphilis, yet I am told by my students that this is one of the most difficult symptoms. The skin lesions, slight or diffuse, will be found to be associated with or connected to some mucous membrane; the nose, mouth, anus or vagina, a discrete, brownish, chocolate macule with a tendency toward desquamation. When healed, a smooth parchment-like surface is imparted to the skin; condylomata result when the rash occurs about the anus; fissures and mucous patches are recognized when it is near the mouth. In very young infants a diffuse thickness of the skin of the soles of the feet and palms of the hands occurs and after desquamation the skin assumes a glossy and shining appearance; this condition of the feet and hands I always look for in every new case brought to me.

Sir Jonathan Hutchinson has the honor of first describing that characteristic deformity of the teeth due to syphilis. He limits this to an expression in the second set of teeth. The first set may not give any evidence of the disease. Hutchinson's teeth stand for faulty development, they may be notched, peg- or screwdriver-shaped. Usually the deformity is limited to the upper incisors and they are frequently separated from their fellows. I have long been observing the teeth of young children, especially those institutionally reared, and have noticed the havoc accomplished by artificial food. It is evident that the teeth share in the general demoralization of the whole digestive tube, and we find all forms of dental decay in the first, as well as in the second dentition. The law that Hutchinson enunciated would seem to have some exceptions. To illustrate by an example in private practice:

Mrs. S. came to me in 1910 with her sister's child, six months old, and gave me the following history: The sister was forty-one when she died, her first child was born in 1908: stillborn, about seven months; the skin over the whole body was macerated. The second child, 1909, was born alive and lived two weeks; had eruptions or "blisters" all over its body. The third child was born in 1910, and weighed four pounds. The mother died of puerperal septicemia and the living four-pound child was given to the sister who cared for it artificially under my care.

The child had an uneventful career during its four years of existence, no eruptive or infectious diseases. The foster mother was unusually careful in all details by reason of the parental history.

Handicapped as we were with a questionable history, our effort was to prevent as far as possible any expression of the usual troubles of bottle-fed children. We had but slight evidences of rickets, dentition was slow, the first tooth coming at nine months. When the child was two years old she had ten teeth, four upper and six lower ones. The teeth soon blackened after they were well erupted. The teeth were, in addition to the discoloration, peg-shaped and notched and far separated from each other. The child died suddenly this summer in a convulsion, the third she had had within the last eighteen months. I have no doubt the child would have given a positive Wassermann reaction had I been allowed to make one. The only evidence we had in this case was the family history and the character of the first upper teeth.

Still, of London, cites a typical history of the syphilitic manifestation of Hutchinson teeth in the following note: "A male infant, aged fourteen months, was brought to the Hospital for Sick Children, Great Ormond Street, for screaming and colic. His upper central incisors were both of the typical screwdriver shape, narrower on the margin than at the base, and showed at the cutting edge a well-marked shallow crescentic notch, and in addition evidenced that undue separation from one another which is so common in syphilitic teeth."

I do not think that a more characteristic specimen of syphilitic teeth could well be found, for while there was no other evidence of active syphilis in the child, still the following family history was strongly suggestive of luetic taint. Of four pregnancies the first child was stillborn at six months; the second, a premature eight-months' child, which lived nine weeks; the third, a seven-months' child born deaf and dumb; and the fourth, the patient above mentioned. Smali and Colyer, in their treatise on "Diseases and Injury of the Teeth," refer to a case recorded by Oakly Coles of peg-shaped teeth in a temporary set which were very characteristic, occurring in a child the mother of whom had long been subject to syphilis. However, referring to the central notch which is seen in the upper central incisors in the permanent teeth in congenital spyhilis the same writers point out that it must not be solely relied upon in diagnosis, as it appears to be produced form other causes in the teeth when there is not the slightest taint of congenital lues.

So deeply interested have I become in the manifestation of congenital syphilis in the teeth of children that I have written to a large number of pediatricians throughout the United States as to their views on the subject. They seemed to be uncertain as to the various expressions of deformity in children's teeth, i.e., peg-shaped, separation and notched. Yet the majority were quite convinced that the so-called "Hutchinson teeth" might include both sets. Abt has written up the various abnormalities of the first set of teeth occurring in rachitic children, namely, late eruption, early decay, black and eroded teeth, all of which seem to follow malnutrition and its consequent evils, but no reference is made to syphilitic teeth. This seems to be the common belief and teaching of most of us. It is reasonably certain, however, that the many dental deformities occurring in malnutrition and rachitis have been very confusing to the physician, as he has not recognized the peg-shaped teeth or the marked separation between the teeth simply because they have erupted slowly, or were not erupted at the time the mouth was examined. Hereditary syphilis in children renders them anemic, small of stature and so poorly developed in other ways that the unfavorable conditions thus thrown around them so delays the eruption of the first teeth, that we are often inclined to neglect making a discriminating diagnosis between rachitis and inherited syphilis. Another thought is this; Children with a positive Wassermann reaction between two and three years of age frequently show complete decay of all the upper incisors, thus causing us to think of rachitic destruction of the teeth, which most likely is the true factor, yet the peg shape and the space between the teeth, the true expression of hereditary syphilis, may fail of recognition.

It is my experience that hereditary syphilis is very frequently entirely unrecognized in young children, since they are frequently suffering from some catarrhal or febrile complication that often misleads us, and in this way the true underlying trouble escapes the attention it deserves. It was for this purpose, therefore, that a few of the old classical symptoms were again revived lest we should forget them. It would not be within the province of this brief paper to underestimate the great value of the Wasserman test which has rendered us such invaluable aid in diagnosis; yet I feel called upon, as a clinician, to impress upon all physicians the necessity of recognizing a few of the cardinal symptoms before the Wassermann is instituted, inasmuch as the quantity of blood necessary for the test, little as it may seem, is quite a demand on the vitality of a young child, already weakened by disease. I have long felt that if we are successfully to treat our young patients a correct diagnosis must be made before the fourth month, and it will frequently be found that children who are apparently perfectly healthy for the first month of their life may, before the end of the fourth month, reveal some one of the symptoms to which I have directed your attention.

Conclusions.

We may summarize that

1. The most formidable type of hereditary syphilis may not show up, clinically, in children, until after the fourth or sixth week.

2. Pseudoparalysis is an early and often overlooked symptom occurring between the second and fourth weeks.

3. Craniotabes belongs as frequently to syphilis as to rickets.

4. The Hutchinson teeth may occur in the temporary set.

THE CARE OF INSTITUTIONAL INFANTS OUTSIDE OF INSTITUTIONS*

BY J. H. M. KNOX, JR.

Perhaps nothing is more characteristic of the age in which we live than the emergence into our every day living, of what may be called Social Consciousness, of the realization that no one can live up to himself, and that his well being is inevitably bound up in the well being of the community in which he belongs. This leads to an increasing interest in the constituent elements in such a community, and to a desire to bring comfort and relief to those members politic, which have need. Happily, we have come to believe that this aid must be given, not as alms or charity, but as a right, which these less fortunate members of society can claim as their own, and we know that the withholding of such help will hinder the whole triumphal march towards higher things.

No class in the community has so undeniable a claim to their interest and assistance of those who know and have, as has the defenseless infant. The gradual recognition of this fact marks the social age in which we live. We are beginning to see the dawn of the Children's Day. The great loss to the race in the unduly high infant death rate has now long been the interest and assistance of those who know and have, as realized and searching inquiry has been directed into some of its more evident causes.

Maternal nursing has been fostered, pure milk crusades have been launched, milk stations and district visiting have been begun. The importance of fresh air, proper clothing and cleanliness has been taught in all our streets and alleys. The response has been remarkable. On all sides, where the true maternal instinct could be appealed to, the mothers have accepted the proffered advice with gratitude, and the infant death rate has markedly fallen.

---

* Article sent to author for correction. Publisher is forced to go to press without receiving author's proofs.

A large group of infants, however, and perhaps the most needy of them has been affected comparatively little by these movements. I mean the large numbers of homeless infants, an army of waifs, many of them the fatherless evidences of shame, others, members of family circles broken by death, desertion, poverty or ill health. All these and their kind have rights to life, which are not fulfilled when the doors of an institution are closed upon them, or by any than the best substitute for the natural home that has been denied them.

In the past, asylums and kindred institutions, often beautiful in architecture and imposing in appearance, built by the State and philanthropy, were thought to be the most suitable places for the fostering of infant and child life, away from the baneful influences of immoral or unhealthful homes. Whatever may be said of their advantages, for older children, and these are now thought to be outweighed by various disadvantages, which become evident when the battle of life is commenced, there can be no question, whatever, that large institutions, where well infants are treated collectively, are utterly unsuited for the permanent care of infant life.

No community, therefore, interested in baby welfare, can feel its duty well performed when a considerable number of these dependent waifs are assigned for their early months to the best equipped and luxurious of institutions. Doubtless most of this audience is familiar with statistics of institutional infants, but the public at large cannot understand their meaning, for if it did, it certainly would take immediate steps to remedy their evils. The experience in Baltimore can be duplicated in many cities in the country. Out of 229 foundlings committed to the city institutions in the last ten years, 204 or 88 per cent died within a few weeks.

Many of these children were diseased and weak, but the large majority were healthy new-born babies, whose lives were lost simply because their environment was not suited to their needs. The institutions to which they were committed were excellent of their kind—good milk, regular feeding and kindly nursing was furnished. The thing that was lacking, and which seems to be essential for baby life is individualizing, motherly care and quiet. One only has to visit a typical asylum baby ward to realize how ill adapted it is to the demands of baby life. The long rows of cribs a foot or two apart, the necessarily mechanical rules of feeding and care, the frequent lack of sufficient air space, the constant crying of some baby, the rapid moving to and fro of attendants, these and similar factors create an atmosphere in which it seems to be impossible for an average healthy baby to thrive for a considerable period. Wards such as those described have no resemblance to a normal home where only one baby is present at a time to receive the undivided care of the mother. Such wards have always seemed to me to resemble more a cemetery with its rows of white head stones, of which indeed it is usually the forerunner.

In the last two summers the value of quiet and individualizing care for weak and convalescent babies has been well illustrated by our experience at the Thomas Wilson Sanitarium, near Baltimore. At this country hospital, in addition to the larger wards there are three separate two-roomed cottages under forest trees. To these cottages were transferred a number of malnutritic babies, who were not doing well in the ward, despite the fact that they lived for the most part on open porches, and had sufficient routine care. Almost without exception, the babies so transferred and isolated two or three to a room at night, and placed under trees by day, where they could not disturb each other, improved on precisely the same diet on which they were gradually losing in the ward. I had tabulated the number of hours in the twenty-four these babies slept on the ward and in the cottages, and in the latter situation the hours of sleep were almost double those on the ward. It would be difficult for a large asylum to duplicate the favorable conditions, which are to be had at this summer hospital for babies, and hence I feel strongly that notwithstanding the pure milk, the very efficient service of trained nurses and nursery maids, one to every three or four babies, the hospital ward is not a good place for the baby to stay when acute symptoms are over. There is a nervous strain in a large institution, an excitement produced by the attendants passing from cot to cot, which seems to be definitely harmful to an infant. Until such time as normal home life can be more closely simulated by institutions caring for infants, and babies can be segregated in groups of two or three in separate rooms, and each of these groups given the undivided attention of a skilled attendant, can institutional life be substituted for family life with any hope of success. I need not weary you by statistics of institutions offering permanent care of young infants. In such places the death rate is high the world over, from forty to ninety per cent, usually nearer the latter figure, and it has been lowered only by admitting with the infants their mothers, who nurse their babies and give them their individual care that would otherwise be lacking. If the normal baby has a death rate higher than any other age period of life, when brought up in its own home, by its own mother, how much greater must we expect the loss of life of the so-called dependent infant to be, with an average of considerably less vitality, with a larger incidence of disease, when cared for under such abnormal conditions as are offered by institutional life. If we would save these babies, therefore, and they are well worth saving, for the majority of them will grow up into efficient manhood and womanhood, we must see to it that they are surrounded by conditions at least approaching those of their more fortunate brothers and sisters. The need is for home life properly supervised, a foster home that is as nearly as possible like the home that is their birthright and from which they have been deprived. It is perhaps ill becoming for one from another community to come to Boston and plead for the substitution of foster homes for young infants, for certainly in no American city has this arrangement for the continuous care of the dependent infant been so generally carried out, through your most efficient Children's Aid Society, and particularly by the Massachusetts Baby Hospital, which I understand now has been able to do entirely away with the institution and supply, for these cases, boarding homes, under medical and nursing supervision.

It is thrilling to note in a recent report that, of a total of 816 infants under their care in one year but 86 died, a mortality rate considerably lower than that of all classes of infants in the country at large. Work of similar character is being admirably carried on in New York and Philadelphia and in Baltimore on a smaller scale. In this method of efficiently caring for the young infant, we are following the lead of older European countries, which with various modifications, have used a boarding out system for many years with results much more satisfactory than were ever obtained through institutional care alone.

In even younger lands, as in Ontario, Canada and in Australia, all infants deprived of their natural parents, are made wards of the state, are registered and placed out in homes, if for no other reason than the enormous value which accrues to the state from the lives that are saved by this system.

The experience of Dr. Bernardos' homes, probably the largest charity in England, dealing with infants, is most instructive. Years ago they established a large institution, especially for babies, called the Baby Castle. It was said to have been beautifully designed and perfect in every detail, but in it the babies did not thrive. The General Secretary of this endowment writes that their experience leads to the conclusion that a large segregation of babies under one roof is fatal to their well being and health, however carefully they may be looked after. The improvement of the babies after boarding out was most marked and they do not hesitate to affirm that the death rate of institutional babies is four times that of those placed in homes.

Our own experience at the Thomas Wilson Sanitarium, although limited, is also suggestive. During the last three years, we have placed out to board in farmer's families, within a radius of about three miles of the Sanitarium, about seventy-five infants. The cases selected were either those convalescent from acute disease, but which in our judgment, were not strong enough to return to their homes during the hot weather or those who, able to leave the Sanitarium, would have gone to homes which, in the opinion of our nurses, were unfit to undertake the care of an infant. Almost without exception the infants so placed did better in their foster homes than if they had remained in the hospital. Last summer we assigned a nurse to the supervision of these boarding homes. She made three or four visits a week to each home, weighed the babies and instructed the foster mothers as the district nurses do in the city. Several very young babies did very badly and were readmitted to the hospital. There was no difficulty whatever in securing these homes for both colored and white infants at from $2.50 to $3.50 a week. A number of satisfactory homes were offered for which he had no suitable cases. I am confident that some such system of placing out selected cases would be a most valuable adjunct to every infant hospital receiving ill babies and which wants to make its influence permanently helpful in the community.

The record of our Children's Aid Society in Baltimore, the Henry Watson, in its care of the unmarried mothers and the illegitimate child has been wonderfully successful, as compared to the antiquated methods of social ostracism of the mother, and more or less speedy institutional death for the child. In the last three years more than seven hundred of such cases have been treated with an infant mortality of less than four per cent. In every case the mother has kept her child, and probably on this account there rarely has been a second pregnancy. In most instances, the women usually from the country have been allowed to return to their own communities, nearly half of them have been subsequently married. Here, too, there has been no difficulty in securing temporary homes. To make this system successful, strict and efficient supervision is of course essential. The foster mother must realize that a strong sympathetic body is behind her ready to help her in every way and to furnish medical aid to the child in case of illness. When this relationship is understood the experience now of many placing-out societies agrees that satisfactory homes and at reasonable rates can be found to meet all suitable cases. In this way, a new and honorable avocation is opened to many worthy women, who need assistance and who often have difficulty in securing remunerative employment. In the field of endeavor, as in all other really effective social work, generalizations have their definite limitations. If you would really help any given baby, that particular baby's needs must be supplied. If it be a sick baby it can probably be best helped in an infant's hospital, where its disease can be studied, a diagnosis arrived at and proper treatment furnished more readily than in any other way.

There is a crying need in all parts of the country for a multiplication of modern hospitals, thoroughly equipped for the treatment of the diseases of children. If it is a well baby, by misfortune for which it is not responsible, deprived of a home, a home must be furnished, if a charitable and just public would give the baby its rights. When we consider how sacred the life of an unborn baby is in the conception of cold legal justice, and how promptly the taking of this life is punished by the State, is it not a travesty upon justice to insist upon the birth of these unfortunate infants, and then intentionally or quiescently so to permit them to be so treated as to destroy their lives in a few short weeks?

The Master Himself, never asked if the children, who came to Him so willingly, were the offspring of blessed or unhappy love, and it would seem to be the duty of those, who follow falteringly in His footsteps, to see to it, that every child, no matter what its origin, is surrounded by such an environment as will, as far as possible, insure its health and a fair chance in after life.

THE HEALTH OF CHILDREN UNDER SCHOOL AGE*

By David Forsyth, M.D., D.Sc., and F.R.C.P.

One of the earliest and at the same time most disquieting results of State medical inspection of elementary school children in this country was the discovery of widespread physical deterioration among the entrants to the infant departments. The proportion of defective children varied from place to place, but, to take the most prevalent defect alone—namely, dental disease—the percentage in number of typical areas, urban and rural, ranged from 52 to 99. This unexpected result could not fail to turn attention to the conditions of life of children under school age. To what was their deterioration due? Was it that they had been born with so poor a physique as to be able to offer but little resistance to disease? Or were the harmful influences post-natal? No systematic study, however, had been made of the child population during the first five years of life. Their condition up to one year of age was fairly well known by the work of the many ''infant consultations'' which aimed at lowering the infant mortality; but just as the Registrar-General's tables on infant mortality closed with the end of the first year, so these infant consultations kept their baby charges under observation only until their first birthday. After that little was known of them until they came as school entrants under the education authorities.

This was the position when the City of Westminster Health Society, with a view to testing the need and practicability of organizing a system of medical supervision of children under school age, opened a special inspection centre in January, 1912, which is still in active work. The society, relying in the first instance on the information received by the medical officer of health under the Notification of Births Act, gets in touch, by means of health visitors, with every family where a child is newly born. As soon as possible after the mother is up and about, she is invited to bring her baby to the centre to be medically examined, together with any other children of the family who are not yet at school. Further, a certain number of other children under school age of whom the society has cognizance in the course of its work are similarly invited. In this way children of every year up to five are brought for examination. The centre being the pioneer of its kind, the results of its workings are of special interest as providing the only statistical evidence yet published of the physical deficiencies of the child population in each of the first five years, and the following table summarizes the physical conditions noted at the examination of 664 children brought to the centre during 1912 and 1913:

---

*Read before Conference on Infant Mortality, London, Eng., 1914.

Age of child	0 to 0	1 to 2	2 to 3	3 to 4	4 to 5
Numbers examined	294	119	120	79	52
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Decayed teeth	—	1.7	16.7	45.6	55.8
Enlarged tonsils	—	6.7	21.7	27.8	30.8
Adenoids	3.0	8.4	20.0	39.2	48.0
Rickets	19.0	24.4	8.3	5.0	1.9

The outstanding feature of this analysis is the rapid rise in the tide of disease in each year of life. While the large majority of children in the first period are healthy, only the minority go through to their fifth year without at least one physical defect of some kind or other. This is most strikingly seen in cases of dental caries, a condition which is probably responsible for more ill-health among children than any other. Further, it should be added that the proportion of the defective cases in urgent need of treatment increases every year; that is to say, the longer the defects are left untreated the more serious they become, the more protracted and costly the treatment, and, of course, the less the chance of completely restoring health. Finally, although rickets dwindles to insignificant proportions by the fifth year (it is rarely even mentioned in the reports of the school medical officers), its lifelong effects in producing deformity, and more often still in stunting the stature in after-life, have already become ineradicable long before school begins.

Apart from these four varieties of defects (enlarged tonsils, adenoids, decayed teeth, and rickets), not a great deal of ill-health was found—a fact the importance of which is fully realized only when it is remembered that these particular defects are nowadays largely preventible. Rickets spells improper food. Teeth can hardly decay if the mouth and its contents are kept scrupulously clean. Adenoids and enlarged tonsils are intimately dependent on the same circumstance, and on the no less important factor of cleanliness of the interior of the nose. Yet how many mothers apply these simple facts in practice? Comparatively few probably even know of them. To maternal ignorance, therefore, of the elementary needs of infancy must be ascribed no inconsiderable share of this widespread deterioration. It is environmental and not inherited.

Now, although it would be unwise to generalize too confidently from statistics based on a few hundred cases, still it is noteworthy that these figures for each of the first five years lead up to and accord very well with those known to represent the condition of school entrants throughout the country. It is very probable, therefore, that our Westminster children are neither much worse nor much better than children elsewhere. In other words, large numbers of children throughout the country, healthy in every respect at birth, become, within five years, the physically defective entrants whom the education authorities are required, at no small cost, to restore, as far as possible, to their original state of health. And most of these cases are preventible if taken in time, and can be relieved more speedily, and therefore more cheaply, by treatment in their earliest stages than if left until school age, by which time not a few will have received permanent damage, physical and mental.

This national problem cannot be solved by any but a national scheme providing for the continuous medical supervision of children from birth to school age. Inspection centres for this purpose will fill the gap between the school medical service on the one hand and maternity centres dealing with pre-natal and natal conditions on the other. Indeed, their work is so closely related to the latter, of which they are the natural continuation, that the two can be most usefully combined, so that a pregnant mother, after having been brought safely through her confinement, will continue with her baby under the same guidance for the next few years.

By thus making medical advice available for those so much in need of it, a great step towards preventing ill-health among these younger children will have been taken. Still further improvement will be effected when, by teaching girls before they leave school how to rear babies, a generation of enlightened mothers is produced. But it will be many years before these preventive measures alone can meet the situation, since a large though decreasing number of children will still be in need of remedial treatment. Facilities for this treatment—which at present is not to be obtained even in great towns, still less in rural areas—must be provided at no great distance from the children's homes, and without penalizing the mothers by making them lose work in taking the children to and from the centres. Here, again, it should be remembered that the distinction between children under 5 and children over 5 years of age, though cardinal from the educational point of view, finds no support whether on physiological or pathological grounds. The conditions of health at the two periods may differ in minor respects, but for the most part they are the same, and it is difficult to see from the medical point of view what good purpose can be obtained by placing the health of children under the care of different authorities at different times. A continuous medical supervision, starting before birth, extending over the whole of childhood, and retained under the same control throughout, is much to be preferred on the score of medical efficiency.

ATYPICAL ERB'S PARALYSIS

Report of a Case

BY W. H. COLEMAN, A.B., M.D.
Louisville, Ky.

I have seen this little pationt on seven or eight occasions, I had this little girl, six years of age, brought before the society for the purpose of obtaining suggestions as to the diagnosis and proper treatment.

According to the history the child was perfectly normal at birth, but when a month old it was noted that she did not use her right wrist. I first saw her at the age of one year, and she was referred for examination to Dr. Ap Morgan Vance, who suggested that no treatment was necessary. I also sent her to Dr. Joseph B. Marvin, who said he would not advise the use of electricity or anything else.

I believe the family physician applied a splint to the arm which was allowed to remain intact for quite a while, and also used electricity at various times; but there was no improvement, and about two weeks ago the mother again brought the child to me for advice.

It will be noted that she has absolutely no "grip" in the right hand, and under the galvanic current I can get no flexion in the muscles of the hand or wrist, although the fingers twitch slightly. There is no evidence of response at the wrist, but I can get slight flexion of the fingers.

I would like for the members to examine the child carefully before she is permitted to leave. I present the case as one of atypical birth or Erb's paralysis. Holt and three or four other text book authors give three causes of birth paralysis: (1) Cerebral, which is due to hemorrhage into the brain, (2) spinal, which is rare and is due to hemorrhage into the cord, and (3) peripheral, due to injury, and of which there are two forms, viz., (a) paralysis of the extremities, and (b) facial paralysis, or the so-called Bell's palsy.

While this case is not typical, I take it to be one of Erb's paralysis of the forearm type. The most common cause of this variety, according to the majority of authorities, is forceps delivery, or a breech presentation with injury about the arm, neck or axilla, in such situation as to involve the fifth and sixth cervical nerves. The muscles which may be effected are the deltoid, biceps, brachialis anticus, and supinator longus. It is claimed when all of these muscles are involved neither the arm nor the hand of the patient is ever normally developed. This child has a normal hand and arm, so it is not quite typical of Erb's paralysis, although all the muscles mentioned are apparently involved. It will be noted that there is considerable atrophy of the muscles of the arm and the forearm.

As already stated, according to the history obtained, there was a perfectly normal delivery in this case, it was a head presentation and there was no injury inflicted to the head, arm or neck during the process. It was not noted until the child was a month old that she had no use of the right hand. I detected tonight for the first time a slight weakness in the right leg when the child walks, but this had never been noted by the mother previously.

I have seen this little patient on seven or eight occasions, and the questions to be determined are: What is the cause of the paralysis, and what can be done to afford relief? Treatment thus far instituted has been of no benefit.

I have been unable to obtain any history of specific disease in the family. What is the cause of the trouble, and can any benefit be expected from the application of electricity, massage, or any other method of treatment? The only thing I have noted after six or seven electrical treatments is that the galvanic current applied above the elbow along the atrophied muscles produces a slight twitching of the fingers, but there is no movement whatever at the wrist. No muscles in the forearm or arm that can be touched will pull the hand backward.

Rotch (Pediatrics) discusses this subject as follows: Although this form of paralysis has been known in a number of cases to result from pressure by the forceps during delivery, yet it has also been observed after an apparently normal delivery, where the pressure did not seem to be especially severe or prolonged. When the arm is affected, the lesion is supposed to be an injury of the brachial plexus, or of the nerves in the lower part of the neck. When the limbs are affected, both arms have been known to be paralyzed, but, as a rule, the lesion is of one arm. Where the paralysis affects an arm, it hangs lifeless by the side, with the palm turned backward and the fingers often flexed. The fingers and the forearm may be moved, but the movement of the upper arm to any extent is lost.

In regard to paralysis of the arm, the prognosis is generally unfavorable, especially if marked improvement does not soon occur, and ordinarily when improvement takes place it is very slow. Most of these cases never recover, and partial recovery should not be expected for a number of years. Shortening of the arm is marked in the later history of the severer cases. We can therefore state that peripheral paralysis of the newborn when it affects a limb is much more serious in its prognosis for complete recovery than when it affects the face.

Electricity and massage continuously applied for a number of years is a very important part of the treatment of these cases, and obviates the atrophy of the muscles from disuse, which must necessarily take place to a greater or less extent (Rotch).

In discussing the foregoing report Dr. S. J. Meyers said that while he could not make a definite diagnosis, he thought the dilation of the pupil, the evident weakness of the right leg, and the condition of the right arm suggested central lesion, and under such circumstances the only procedure which would offer a solution would be surgery. He thought there must be pressure upon the left side of the brain to produce the dilated pupil and paralysis of the right arm and leg, and if the focal spot could be located a decompression operation upon the left side might be of benefit. He merely offered this as a suggestion.

Dr. I. Lindenberger suggested that, purely as a diagnostic measure, it might be well to determine whether there was reaction of degeneration in the affected muscles. Also, in a diagnostic way, he thought a Wassermann test should be made. He did not believe the case was one of Erb's paralysis, and thought not all the nerves of the arm were involved in the process.

Dr. W. B. Owen agreed that a Wassermann test should be made. Even in the absence of any definite history of lues the Wassermann test was advisable, as the symptoms exhibited by the child might be due to inherited syphilis. In the event there proved to be a central lesion, in addition to the decompression operation tendon transplantation might be productive of beneficial results.

Dr. L. P. Spears did not believe surgical intervention was justifiable at the present time. Although no history of syphilis could be obtained from the parents, he strongly suspected that was the cause of the symptoms exhibited by the child, and even in the absence of a positive Wasserman test he thought the patient should be given anti-syphilitic treatment. If surgery were indicated at any time in cases of this kind it should be undertaken in adult life.

Dr. J. B. Richardson, Jr., agreed that surgery was not indicated at present in the case reported, and emphasized the importance of having a Wasserman test made. The mother of the child presented one peculiar symptom, i. e., when her eyes were suddenly widely opened, the pupils failed to respond equally to light. From the fact that the paralysis had been progressive ,it was questionable whether or not its origin was traumatic. There was certainly some lesion which from pressure was causing degeneration, and the chances were largely in favor of its being due to syphilis. He thought a Wasserman test would positively determine that feature. He did not believe the condition was one of typical Erb's paralysis. In this connection, he stated that he had quite recently read the report of a New York physician who claimed that by palpating the brachial plexus it was possible to determine the character and extent of the birth injury! He had faithfully tried the method, but had found it impossible to demonstrate the character of the obstetrical paralysis by palpating the brachial plexus. He believed that anti-syphilitic treatment was advisable in the case reported, and that surgery directed toward the cranium would accomplish nothing.

Dr. J. A. O. Brennan suggested a Wasserman test of the blood and also of the spinal fluid, that the blood frequently showed a negative reaction whereas the spinal fluid would be positive. Whether the inequality of the pupils in the mother was due to a syphilitic brain lesion would be difficult to positively determine, but a Wassermann test ought to throw some light on the question.

Dr. Leo Bloch said he would like to have some definite information about the practical value of the Wasserman reaction, that it was the custom to discuss this matter in a rather uncertain way and no one had ever been able to explain the real value of the test mentioned. One reason he asked the question was that a girl was recently sent to him for a Wassermann test to be made. One physician who had examined the patient said she had syphilis, whereas another said she had not. Examination revealed mucous patches in her mouth and vagina, yet the Wasserman reaction was negative. Under mercurial treatment the mucous patches disappeared, showing that the negative Wasserman was of little importance. He was in doubt about making a report of his examination, as the girl undoubtedly had syphilis yet the Wasserman test showed that she had not. If he sent the patient back to her family physician with a negative Wassermann report, and at the same time advised continuation of mercurial treatment, it would look like a plain contradiction! It was claimed this girl had transmitted syphilis to a man through sexual intercourse about six months ago. There were no symptoms of syphilis, excepting the mucous patches mentioned, at the time he saw her.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics

Stated Meeting Held January 14th, 1915

DR. WALTER LESTER CARR, IN THE CHAIR

Report of Four Cases of Hemorrhagic Disease in the New Born Treated by Horse Serum.—Dr. Abraham Hymanson reported these cases which occurred at the Jewish Maternity Hospital. These infants all gave a negative family history and showed symptoms usually presented by hemorrhagic disease in the new born, namely, blood in the stools, vomiting of blood and puerpuric spots. In all of these cases the children were in a serious state of collapse when treatment was instituted. This consisted of the subcutaneous injection of 12 c.c. of horse serum, followed by a second dose of the same quantity at the end of twelve hours, and a third dose if it was indicated. In one of the cases a dose of 15 c.c. of the horse serum was administered. In three out of the four cases the bleeding ceased in a short time after the treatment was instituted, while in the fourth instance there was a fatal outcome though the injection of human blood, that of the mother, was resorted to when the horse serum failed to produce the desired effect. The horse serum had been furnished by the Department of Health.

Dr. Hymanson concluded as follows: From an observation of the cases under consideration it seemed that the coagulation time of the blood was somewhat delayed in the condition under discussion. 2. As there was always difficulty in obtaining human blood or fresh blood serum, fresh horse or rabbit serum would serve the purpose just as well. 3. In the newly-born infant, where the bleeding was not spurious, the horse serum should be administered early and repeatedly until the bleeding ceased. 4. The injurious effect that was causd by foreign serum had been greatly exaggerated. Serum sickness was, as a rule, a very mild affection, lasting only a few days. Serum death was a rare occurrence. Dr. Probasco (N. Y. Jour. of Med., Jan., 1912) claimed that there was only one death in 25,000 injections of diphtheria antitoxin. It had been shown that nearly all deaths from antitoxin occurred in patients during adolescence or in asthmatic adults.

Dr. Henry Dwight Chapin said that in two cases of hemorrhagic disease in the new born that had come under his observation the horse serum had been tried but had not been effective and that they had been compelled to fall back on human blood serum. Dr. Chapin asked Dr. Hymanson if he had considered giving the diphtheria antitoxin as a means of administering the horse serum, and if he had used the human blood serum, and, if so, with what success.

Dr. L. E. La Fetra said that it was well known that the use of human blood would check most hemorrhages of the class under discussion but the use of whole blood as proposed by Schloss was much simpler. By Dr. Lindeman's method it was a very simple matter to withdraw ten, fifteen or twenty c.c. of blood from the mother or father and inject it into the back of the baby. By this method one did not have to wait as was necessary when blood serum was used. Using whole blood he had been successful in about three-fourths of the cases. The success of the procedure was dependent upon the etiology of the hemorrhage; hemorrhage due to general sepsis was not so amenable to treatment as when due to some other causes. In his opinion this method of Dr. Schloss was the best and quickest one available for this purpose at the present time.

Dr. Fenton B. Turck spoke of the experimental side of this subject. He had been making comparative tests of the intestinal bacteria on homologous sera and had found that in young children bacterial migration occurred in the same manner as had been observed in experiments on young animals. The bacteria passed very readily into the submucous tissue of the intestinal wall along the entire alimentary tract. The bacteria passed between the cells at the base of the villi, crossing the muscularis mucosa into the submucous areolar tissue, the "zona transformans," and were here destroyed. The antiferment in the serum was found to be reduced by this process. They had also found that the administration of chloroform reduced the antiferments in the blood, which was the same phenomena which they now found occurred when the intestinal bacteria entered the submucous tissue and came into contact with the sera. It was found that when intestinal bacteria, B. Coli, were fed to pregnant animals the bacteria would pass into the fetus and cause reduction of the antiferments, resulting in premature births, with hemorrhages and death of the new-born. The study of these experiments gave some suggestion as to treatment. When there was a reduction of the antiferments in the blood it was unnecessary to theorize about the absorption of toxins, for it was not shown that toxins were formed. The rapidly destructive power was the result of the reduction of the antiferments permitting destruction by autolysis to take place. This phenomena could be demonstrated in vitro and in vivo. The experiments undertaken in the production of hemorrhagic diseases were important and seemed to prove the value of supplying the deficiency of the antiferment in the sera by the addition of fresh blood. To the specialist in children's diseases there was an exceptional opportunity of making observations in these cases that were even better than animal experiments and some of the points had been well shown tonight.

Dr. Abraham Hymanson, in closing the discussion, said that in reply to Dr. Chapin's questions with reference to the use of diphtheria antitoxin in these hemorrhagic conditions, theoretically it would amount to the same thing whether they used the diphtheria antitoxin or normal horse serum, provided it were fresh. The diphtheria antitoxin also contained the antibodies in addition to the other active elements of the serum and these ought not to hurt the baby. He quite agreed with Dr. LaFetra in what he had said of the advantages of giving fresh human blood, but the trouble was that one could not always get a suitable donor in a short space of time. He cited an instance showing that the father was not always willing in such emergencies to give his blood. He had used the Board of Health serum and it had worked marvellously well, though the number of cases that he had treated thus far was not very great. Dr. Hymanson said he was not prepared to speak of the experimental side of the work as Dr. Turck had done, but he was glad to learn that it furnished some justification for the clinical results that had been obtained. As to the matter of the placental serum, that could be used with ease in the maternity hospitals by allowing the blood from the cord to run into sterile flasks, centrifuging and sealing with a few drops of chloroform. (The chloroform was used as a protecting layer for the serum.) Dr. Franz of Graz claimed that this could be kept as long as four months, but here one must have the Wasserman test to exclude syphilis.

A Study of Certain Aspects of Epilepsy Compared with the Emotional Life and Impulsive Movements of the Infant.—Dr. L. Pierce Clark presented this communication in which he first recalled that in previous studies of the epileptic constitution and in a psychological study of the meaning of the fit in epilepsy, it had been shown that the fit was a libidinous outlet for the infantile unconscious. The loss of consciousness was thus shown to be due to the insistent demands for expression of the unconscious, transferring the older conception from a negative postulate to a positive dynamic one. In its simplest and crudest form the nucleus of the unconscious striving was a desire on the part of the individual epileptic, not only to return to a state of infancy with the parent, but it really contained a motive for the epileptic to gain the life before birth as symbolized in the idea of life within the mother. In a measure this hypothesis supported by clinical observations seemed to be a sufficient psychological explanation of the fit so far as the loss of consciousness was concerned, which was, after all, the real nucleus of the epileptic attack. There were other questions, however, which arose for solution. One of these was the interpretation of the convulsive movements of the seizure. The physical correlates of the convulsive spasms of the fit showed a very close parallel of movements in intrauterine life and in infancy, and under certain states of excitation produced acts which were point to point identical to those seen in grand mal epilepsy. Probably the convulsive movements in all the varied types of epileptic fits from the most purposeful or voluntary to those of the severe grades were drawn from the different developmental levels of child activities. Dr. Clark then discussed the significance of the epileptic cry which he said most observers were agreed was more than a mere mechanical expulsion of expiratory air from the thorax as a sequence of tonic spasm. This cry of the epileptic could be compared with the pleasure-displeasure cry of infants which was associated with tonic-clonic movements of the arms and legs. There was also an analogy in certain movements in the epileptic with displeasure movements in the infant, such as deflection of the heat to one side, a turning away movement; drawing of the mouth at one side, then upward and backward, and the quadrangular or squarely opened mouth, which Darwin dwelt upon as an extreme expression of childish rage. It was interesting to observe the tedium vitae in the infant and the epileptic alike; the lack luster eye, indolent movements, cessation of spontaneous interest, a falling of the countenance and a paler complexion, all of which had long been considered as heralds of a grand mal attack. The great importance of a large amount of sleep in the epileptic was comparable with that required by the infant, while interruptions of sleep in both infant and epileptics were alike disastrous to well being or good temper. Impulsive and inco-ordinate movements of infancy during sleep and during fetal life had a parallel in the adult in whom such bizarre movements were sometimes seen during sleep and particularly in the epileptic. A study of the infantile poses and postures assumed by epileptics during sleep should be studied more carefully as they threw an interesting side light upon the somatic and psychic infantilism of epilepsy. Some of the depressors of these impulsive movements were deep, quiet sleep, satiation by food, while duplication of the intrauterine state by the warm bath acted as an accelerator. It was striking that both infants and epileptics were little fatigued by the most intense and persistent impulsion which spoke strongly for the unconscious motivation in the activities of both. In conclusion Dr. Clark submitted that they were justified in considering that the essential nucleus of the epileptic fit was a libidinous one; that it consisted in an infantile unconscious striving of pleasure-displeasure pursuit ending in the final goal of an intrauterine life, attended by a loss of consciousness and convulsions; that the convulsion was made up of and expressed through the lower spinal centers in inducing crude and impulsive movements; that a study of the degree of development of unconscious infantile striving in the psychosexual sphere of the libido, the desire for the fetal uterine state of allmacht, was paralleled by the kind and character of impulsive movements found in this infantile period of neuromuscular development. Therefore the two main settings in the epileptic fit, unconsciousness and convulsions, were psychically and physically correlated, and lastly that epilepsy was in its essential pathogenesis an error or arrest of this fundamental elaboration or development of the psychosexual libido. The essential pathogenesis of the disorder was still to be attacked, but the author believed that such studies as the one presented here and as were elsewhere reported, narrowed the gap between such supposed causes of epilepsy as inherited psychic traits and somatic structural anomalies which did not permit of proper psychosexual development into the normal adult. It also pointed the way by which therapeutics might advance along the broadest biological lines of educational and moral treatment.

Dr. John T. MacCurdy said that the underlying wish in the epileptic to return to a state of rest equivalent to that which the individual enjoyed in fetal life might seem a bizarre conception, but from his experience and that of others with the insane it had to be regarded as a frequent type of unconscious wish that came often to open expression in psychoses. From that standpoint therefore he felt fully in accord with Dr. Clark. He then spoke of the importance of the comparison which Dr. Clark had made between the suckling and the epileptic in reference to convulsive movements. On the basis of this identity he outlined a possible physiological theory for the origin of the convulsive movements, on the supposition that the mere loss of conscious control might set all the voluntary muscles into inco-ordinate motion.

Dr. Victor C. Haberman said that it seemed to him that the logic of Dr. Clark's paper was also unconscious. If the initial cry of the epileptic could be sufficiently explained by the sudden contraction of the thorax forcibly expelling the air through the larynx, why should one not accept this explanation instead of a far less logical one? He had noticed that in all their writings, the Freudians gave no proof of their theories; they assumed certain things, left it at that, and then asked others to accept their opinion. Dr. Haberman asked whether the epileptic voice, which Dr. Clark had described some years ago, was also a cry of the libido; also whether the convulsions in renal disease, and in brain tumor were also the expression of the libido? How did Dr. Clark explain the fact that in many cases of epilepsy one found an actual pathological condition? Some believed, and it had even been expressed by Freudists, that all idiopathic epilepsy was due to pathological (organic) conditions of the brain. How did Dr. Clark correlate these facts?

Dr. Israel Strauss said that he rarely spoke or discussed a paper that dealt with a subject treated from the Freudian standpoint because it was impossible to influence anyone who had taken that position. He had very much sympathy with Freud's theories, but he had always thought that the psychanalysis of Freud applied to neuroses and epilepsy was not a neurosis. A study of the brains of epileptics had shown many lesions, and Dr. Clark himself had described changes in the ganglion cells in epilepsy and so it seemed that to look upon this disease as a neurosis one would have to revise his conception of the pathology relating to it.

Dr. L. Pierce Clark said he regretted the facetious element in the discussion. It was quite true that the logic and the line of reasoning in determining a psychological basis for unconsciousness must entirely concern the unconscious and if the logic and the motive of the mechanism were in accord, so much the better. The fact that the epileptic cry was not satisfactorily explained by any simple mechanical principle, and was so stated in any number of text-books on epilepsy, urged them towards finding some other elements as well as psychical to account for it and thus make clearer this one phenomenon which was so peculiarly unique to the epileptic state. It could not be reproduced by imitation, nor was it present in any other phase of disease. They now had a very good explanation of the voice sign. The essential defect in epilepsy was one of the primary instincts. That being the case, they would expect the condition to show in later life as an effective emotional defect in the epileptic mentality, which was the case. If this were granted, they would quite expect that there would be an essential incompleteness of emotional expression in epilepsy. Therefore they found that as a class epileptics were neither good musicians nor had beautiful voices. Of course it was absurd to push the epileptic mechanism to explain all convulsions occurring in other disorders purely as symptoms such as those occurring in renal disease or brain tumor. The equal presence and absence of any histological lesion in the epileptic brain would make one, on the face of that statement, throw aside any lesion as being essentially a causative factor. They must look upon such brain lesions when present as a result of the disorder and not its cause. While many had observed a fairly close relation between certain diseases of the motor cortex and the epileptic convulsion, no one had been so bold as to push the law of psychological parallelism to the point of making such lesions in the cortex the cause of loss of consciousness as seen in the epileptic attack. Inasmuch as the latter symptom was the one essential factor in epilepsy it was necessary for them to bring into play a defect in some fundamental principle in life which should be as broadly significant in motive as that which underlay life itself. This was what the speaker had attempted to do. In point of fact, one might say that all the organic lesions in the epileptic brain were but precipitating factors in lowering mental tension or continuing the same, thus permitting certain morbid phenomenon in the instinctive life to have their play as shown in the fit. While the formulation of the principles which he had brought forward might undergo more or less modification, it was his belief that he had outlined a rational and fundamental plan for understanding both the loss of consciousness and the convulsions of epilepsy. As to what might be the precipitating causes of the underlying defect of the epileptic constitution which permitted individuals to have seizures was still a question demanding solution.

The Present Conception of Chorea.—Dr. Israel Strauss read this paper which he prefaced by referring to the many different hypotheses that had been advanced to account for chorea. He stated that it had been attributed to a hereditary tendency, to neuropathic taint, fright and excitement. The more probable theory was that these were but predisposing causes, the disease itself being of infectious origin. The purpose of this paper was simply to weigh and discuss these different views. The relation of rheumatism to chorea had been noted and the suggestion had been advanced that they might be due to the same agent, or that the one stood in a causative relation to the other. Possibly chorea was a meta-rheumatic condition just as tabes and paresis were parasyphilitic affections. Authorities were by no means in accord with regard to the embolic theory. One authority stated that 56 out of every 63 cases of chorea gave a history of rheumatism and Thayer stated that 21.6 per cent. of choreics had had rheumatism. To settle this question satisfactorily, the etiology would have to be discovered in both conditions. There was evidence of the presence of the streptococcus in most cases of polyarthritis. Diplococcus and staphylococcus pyogenes aureus had been found in choreics and much biological work had been done by the different methods, complement fixation, aerobic and anaerobic methods, and the results differed widely. Chorea had been known to follow typhoid fever, malnutrition, syphilis, the abuse of alcohol, etc. It was a disease of early life and occurred most frequently between the ages of six and fifteen years. It was more apt to occur in wet cold seasons. It was frequently febrile in the early stages and gave evidence of endocarditis. The fatal cases showed the rugae of endocarditis. What influence the cortex exerted was unknown. In fatal cases the brain lesions were those of acute encephalitis and this brought up the question to what extent such lesions were present in the ordinary cases that went on to recovery. The probability was that this would never be known until some case of moderate chorea died suddenly and an autopsy was obtained. In the present state of their knowledge the only conclusion that was justifiable was that chorea was probably of infectious origin, but the data at present was altogether insufficient to decide the nature of the infection.

DISCUSSION ON DR. STRAUSS' PAPER.

Dr. L. E. LaFetra said he had come expecting a very different expression of opinion on the subject of chorea and was prepared to disagree, but, on the contrary, he quite agreed with what he had heard. It seemed that chorea must be considered as closely related to polyarthritis and must be considered as due to some kind of bacterial infection in the vast majority of cases. There were two points to which he wished to call attention: First, in Bellevue Hospital they had made a number of studies of the blood in chorea and in two of these the streptococcus viridans as found in the blood Complement deviation tests by Dr. Hoobler were found positive in two other cases. In the second place, it had been observed that children who had just recovered from polyarthritis or acute endocarditis frequently developed chorea while still in bed. When the influences that were generally given as exciting causes of chorea were absent, when there was no fright, no malnutrition, no excitement, nothing in the way of nervous shock to account for the development of the chorea, one might feel quite positive that in the majority of cases chorea was an infectious disease. On the other hand, there were some cases that followed so quickly upon fright and nervous shock that it would seem probable that there were cases that had a basis other than that of infection.

Dr. Haberman said that no mention had been made of psychic chorea. He recalled a striking case that came to Dr. Starr's clinic some years ago. This patient had a chorea so apparently typical that Dr. Starr was about to show her to the students. For the relief of a headache of which she complained she was taken aside and treated by hypnosis. On awakening, not only the headache disappeared, but the entire chorea. After this Dr. Haberman treated a large number of choreics coming to the clinic psychically and found that in some the chorea disappeared at once; in others after a few treatments. These cases could not have been rheumatic chorea. In studying a still larger series he had come to the conclusion that psychic chorea was not uncommon, and that many, if not most, of the cases lasting over three months, were of this nature; also that many of the recurring attacks in neurotic and hysterical children who might have had a real chorea in the beginning were psychogenic. The child was on the watch for a new attack and so got it. These cases were all strongly amenable to psychic therapy. There was no way of differentiating the rheumatic from the psychogenic save by the result of treatment. Another series of cases was due to congenital syphilis. Millian in France and Nonne in Germany had called attention to these cases; the former believed that he had found lues so frequently in the heredity of choreic cases that he thought chorea itself must be a manifestation of congenital lues. Few, however, had accepted his view. Nevertheless there were cases certainly due to this factor. Dr. Haberman cited the case of a child whom he had recently treated. who had had chorea for three years and been treated by a number of physicians none of whom thought of associating the chorea with congenital lues though the mother gave a positive Wassermann reaction. Antiluetic treatment speedily cured the chorea.

Dr. Henry Dwight Chapin said that Dr. Roger, the French clinician, had studied the relationship of rheumatism, endocarditis and chorea many years ago, and had come to the conclusion that they presented the same underlying pathological condition, and it really seemed that up to the present time they had not gotten much beyond his view. It seemed undoubtedly that they were all of infectious origin. Where one of the three conditions was found one was liable to meet the others.

Dr. Henry Koplik called attention to the importance of seeing these cases of chorea through years, for it might be said of chorea, "once a choreic always a choreic." Seeing the heart gradually becoming worse and worse led to but one conclusion and that was that the poison causing the chorea was producing the endocarditis. The way in which the term rheumatism was used today was most unfortunate; it was much like the former use of the term "malaria." It was probable that the poison causing polyarthritis was closely allied to the one that produced endocarditis and chorea. The question was whether the habit movements were the result of or a continuance of a condition produced by infection. The cases which Dr. Haberman had spoken of as controlled by hypnotism could not of course be due to the same etiology as that associated with cases supposed to be due to infection. In many cases in which the blood cultures of cases of chorea had been examined the technique may have been faulty; in others a mixed infection may have been found. In several cases of chorea which he had had examined in this way nothing had been found in the blood. It was quite possible that the streptococcus might accompany the true organism just as it might be found associated with the Klebs Loeffler bacillus.

Dr. Elias H. Bartley of Brooklyn stated that they had made cultures at the Long Island College Hospital of three or four cases of well defined chorea, and in none had they found any organism. This was not a large number of cases and it did not lead to the conclusion that there was no infection, but it did mean that the particular organism which had been mentioned had not been found; if this organism was the cause of the disease it must be constantly found in the disease, and as it was not found to be constant it could not be regarded as the cause of chorea.

Dr. Israel Strauss, in closing the discussion, said he quite agreed with Dr. Koplik that it was unfortunate to use the term rheumatism as was done, since no two or three men agreed as to its meaning. With regard to polyarthritis and chorea, they could not say that the streptococcus viridans was the agent producing these affections. Dr. Libman's work at Mount Sinai Hospital was such that they could not say that he was incompetent to isolate this organism if it was in the blood, yet they had not succeeded in isolating it from the blood in chorea though they had made cultures aerobically and anaerobically. Personally he did not believe that if the streptococcus viridans was there it would have escaped notice. Another point in regard to the relationship of rheumatism and chorea—in chorea one did not get good results from the use of the salicylates; the results were not those obtained in polyarthritis. On the other hand they had tried neosalvarsan in chorea and sometimes with surprisingly good results. This suggested that a protozoon might be involved. They had no right to say that because rheumatism occurred and was followed by chorea that the latter was due to the same cause as the former, neither could one say that because endocarditis had been found in 21 per cent. of the cases of chorea that the endocarditis and the chorea were due to the same cause. When one had a severe case of chorea insaniens, he could not, as a rule, save it no matter what was done.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Orthopedic Surgery

Under the Charge of

JAMES K. YOUNG, M. D.

Associate Professor of Orthopedic Surgery, University of Penna.; Professor of Orthopedic Surgery Polyclinic Hospital; Clinical Professor of Orthopedic Surgery, Women's Medical College.

and

A. BRUCE GILL, M. D.

Dispensary Surgeon to the Presbyterian Hospital; Assistant Surgeon to Widener Memorial School.

Trigger Finger, with the Report of a Case by E. D. Fenner. New Orleans Medical and Surgical Journal, December, 1914.

The author reports a case of trigger finger of the little finger of the left hand caused by playing golf. It was relieved by fixation in a splint, but recurred later when the patient again tried to resume the sport.

This not uncommon condition is due to a disproportion between the flexor-tendon of the finger and its sheath. Either the tendon is enlarged at one point or the sheath is constricted, so that the tendon will not pass through the sheath at this point except by main force. When it is thus forced through the finger flies to a position of full extension with a snap, or click.

For the recent, milder cases, rest and extension upon a splint may suffice for a cure; but in the remaining cases operation should be performed to relieve the constriction of the sheath, or to excise the nodule on the tendon. Abbe of New York is of the opinion that this condition is due to constriction of the flexor-tendon by a band of fascia beneath the distal palmar crease, and he has relieved one case by a subcutaneous incision of such a band.

Weak Feet.—By W. Barnett Owen, Surg., Gym., and Obstet., Feb., 1915.

Weak foot has markedly increased in civilized countries during recent years, and the increase has been relatively greater among females than among males. This is probably due to the wearing of improper shoes, particularly shoes with high heels, which disturb the balance of the body and destroy the normal mechanical function of the muscles of the foot and leg.

Pain is the chief diagnostic feature. It is marked when the patient is walking or standing and is relieved by rest.

Rigid feet should be forcibly corrected under ether and kept in plaster casts for at least two weeks. Then massage and exercises should be given to secure motion and strengthen the muscles. At the same time a proper brace should be worn for a year to hold the feet in correct position. In less marked cases exercise and the application of proper shoes and the assumption by the patient of a correct position of the feet in standing and walking, i.e., with the feet parallel, will effect a cure. All mechanical support should be withdrawn when the muscular power has been developed.

The Treatment of Rotary Scoliosis.—By James K. Young. The Medical Council, December, 1914.

Formerly structural scoliosis was considered practically incurable, but in recent years methids of forcible correction amd maintenance of the corrected position by plaster casts have rendered these cases amenable to cure. Abbott's method appears to secure the best results. He fixes the patient in a heavy frame with the spine flexed and secures rotation and lateral bending by applying pads and by traction upon heavy bandages placed in the proper positions. When the patient has been forced thus into a corrected or an improved position a heavy plaster jacket is applied. Certain removable pads are withdrawn through windows to allow the spine to assume gradually a better position as the body is forced backward at intervals by the insertion of felt pads in front.

This procedure is equivalent to a capital operation. The cases should be selected as this method of treatment may not be applied to all.

Bone Splinting in Vertebral Tuberculosis.—By Sherman and McChesney. Cal. State Journal of Medicine, December, 1914.

The time-honored custom of treating vertebral tuberculosis by means of recumbency, plaster jackets, and braces was effective in arresting the disease in a proportion of cases. But they were recognized to be only partially effective in producing the condition of rest or immobility of the spine that was aimed at. Then appeared the two methods by Hibbs and Albee of providing an internal splint for the vertebrae that effectively meets all surgical conditions and is effective.

The authors have employed the Hibbs method in cases of dorsal tuberculosis and the Albee in cervico-dorsal, dorso-lumbar, lumbar, and lumbo-sacral cases. They have performed thirty operations, of which all but one healed normally. That one became infected from a septic sinus that lay in the field of operation, and the Albee graft nerosed and was removed. One child died of tuberculosis meningitis five weeks after a normal healing of the wound; and a second died eight weeks afterward from a septic psoas sinus, although the operative wound healed normally and remained closed. All the other cases are living. Seven of the twenty-five are going about without artificial support and are in good condition. Nine others are in good condition but are still wearing plaster jackets. Two are going about without support but are in unsatisfactory condition. Five have been put back in a recumbent position in jackets. The old cases of paraplegia remained unchanged, one cleared up, and another one developed after the operation. In three cases tuberculosis abscesses disappeared, in two they remained unchanged, and in one an abscess appeared after operation. In six children the kyphos has increased in size or acuity.

These results are considered to be fairly good considering the fact that all cases were operated on that presented themselves, no selection being made, and considering the serious nature of the disease.

The authors draw certain conclusions from a study of this series of cases. The earlier the operation is performed, the better is the result. Operation should also be performed upon the severe and the advanced cases, as they have the most to gain and the least to lose thereby. Futhermore, all intermediate cases should not be refused this aid to recovery. The Albee technic is given the preference over the Hibbs. Operation does not remove the necessity of careful after treatment of vertebral tuberculosis. It is a valuable aid in combating this disease, but nothing more.

Some of the Deformities Following Infantile Paralysis, with Especial Reference to Treatment. By W. Barnett Owen. Am. Jour. of Surg., December, 1914.

The author strongly advocates operative treatment to cure deformities resulting from infantile paralysis and to make weak or frail limbs able to perform their proper function of weight bearing and locomotion. He considers tendon transplantation, arthrodesis, the implantation of silk ligaments, and various methods of fixation of tendons to serve as ligaments; but he adds nothing new to the subject

Miscellaneous Abstracts

Prevention of Vulvovaginitis in Children.—F. J. Taussig (Amer. Jour. Med. Sci., Amer. Jour. Dis Women and Children) thinks, from study of sixty-six cases of vulvovaginitis in girls of from three weeks to twelve years, that the most frequent source of infection is from child to child and that the most common manner of its transmission is through the school lavatory. As special precautions for its prevention he advises, (1) the instillation of a drop of 2 per cent silver nitrate solution in the vestibulum vaginae of all newborn girls whose mothers show evidence of gonorrhea, though probably not over 5 per cent of the cases of vaginitis are infected at birth. (2) Making vaginitis in children a disease reportable to the Board of Health. (3) Instruction of parents of infected children through the visiting nurse regarding preventive measures to limit the infection, including the use of separate towels and wash-cloths, sleeping in a separate bed, care as to cleansing contaminated clothing, and special precautions in the use of the lavatory. (4) Investigation by the visiting nurse as to the probable origin of the infection in each case with a view to excluding this factor from contaminating other children in the same house. (5) The adaption of a U-shaped seat with low bowl and other precautionary measures to prevent the spread of infection through the public lavatories in schools, playgrounds, comfort-stations and tenements. Children cannot be relied upon to use paper coverings for lavatory seats, so the U-shaped seat should be used in addition. The height of the bowl should not be over eight inches where the lavatory is to be used by children of school age.

Enuresis.—A study by A. B. Schwartz (Bost. Med. and Surg. Jour., Amer. Jour. Dis. Women and Children) of 226 cases of enuresis, 148 males, 98 females, 3 diurnal, 134 nocturnal, and 89 both diurnal and nocturnal, leads to the conclusion that the cause of enuresis in children is not the same in every instance. In some the nervous element undoubtedly plays a part, and in others faulty habits. Local irritation from any source is a predisposing cause. Excessive fluids result in greater secretion of urine, while too little fluid results in a concentrated urine, which, whether it contains crystals or not, may irritate the base of the bladder and cause the desire for frequent micturition. Enlarged tonsils and adenoids apparently have no connection with enuretis. Digestive disturbances did not in themselves have any connection with the condition, but it is conceivable that constipation may be a predisposing factor.

Voice Sign in Chorea.—Continuing his study of the voice changes in chorea, W. B. Swift (Amer. Jour. Dis. Women and Children) finds in twenty cases of chorea, with over 500 observations on the voice, a change in pitch and intensity in two cases of three. These choreic voice changes are more frequent in the vowels, less so in whisper, whistle, consonants, air blow and holding of breath; and are less and less in frequence in this order. Other less frequent and less marked changes occur that seem of interest subordinate to those in the vowels The most marked change occurred in the open prolonged sound of "a" as in "are," and therefore this is offered as the routine clinical test and method for the elicitation of the choreic voice sign.

Cerebrospinal Meningitis.—J. Rupert Collins (British Med. Jour., Feb. 13, 1915) outlines the treatment of cerebrospinal meningitis by anti-meningococcus serum combined with autogenous vaccine.

The case of cerebro-spinal meningitis here described may be of interest, as from Sir William Osler's article in the British Medical Journal for January 30th it appears that there are other foci of the disease among the troops.

A boy, B. S., aged nine years, was quite well up to January 11th, 1915. On the morning of January 12th he complained of pain in the head and vomited twice. Dr. Dighton, when he saw him the same day, found him semi-conscious, restless and with a temperature of 105 degrees. On the next day Dr. Dighton asked me to see the patient with him, and we saw him together each day until the boy's death.

On January 13th the boy was unconscious, delirious, lying with thighs and knees flexed, restless, but resenting being moved. Some purpuric spots were present irregularly distributed over the trunk and limbs. The abdomen was retracted, no enlarged glands could be felt, and no abnormality was detected in the heart or lungs. The pupils were equal and reacted to light, there was no strabismus and no retraction of the head. Kernig's sign was very marked, the plantar reflex was irregular, and the knee-jerks were present. It was evident that we were dealing with some form of meningitis and it remained to determine its nature.

At Dr. Dighton's suggestion, I had brought apparatus for lumbar puncture, and drew off 15 c.cm. of cerebro-spinal fluid, which came away under considerable pressure. The fluid was very turbid and on standing left a deposit of nearly half an inch of pus in the bottom of the test tube. A few gram-negative diplococci were found after long search through the pus cells. Cultures made from the fluid yielded a good growth of Weichselbaum's diplociccus. Subcultures were made on a dozen tubes, from which a vaccine was prepared. The patient beame quite conscious after the lumbar puncture and passed a good night.

On January 14th I removed 20 c.cm. of cerebro-spinal fluid and injected intrathecally 16 c.cm. of antimeningococcus serum (Burroughs, Wellcome and Co.). After this the patient became very restless and remained very restless all night. The next day the patient was unconscious and the pulse was so extremely feeble that we did not think it safe to perform rachicentesis. His head was now markedly retracted, and the left eye showed conjunctivitis and some opacity in the anterior chamber. Autogenous vaccine, containing half a million of the diplococcus meningitidis was injeted subcutaneously.

On January 16th he seemed distinctly better—much to our surprise, as we had not expected to find him alive. He had passed a good night, and taken nourishment well. The pulse was stronger, and he was conscious. We decided to give a second injection of the antimeningococcus serum. Dr. Dighton gave him a little chloroform, as he had done on the previous occasions, and I drew off the cerebrospinal fluid. As the fluid came away the pulse gradually became weaker; when 12 c.cm. had come away the pulse was imperceptible at the wrist; we then stopped, and injected 8 c.cm. of the antitoxin. As this was done the pulse again appeared at the wrist. The remainder of the phial of serum was injected subcutaneously. He did not sleep at all that night, and on the morning of January 17th the nurse gave him an injection of pituitary extract, as his condition became very bad. We found him later quite unconscious, with scarcely perceptible pulse, 150 to the minute and the head still more retracted. The anterior chamber of the left eye now contained thick, curdy-looking pus. He was again injected with half a million of his autogenic vaccine. The evening of the same day he was again seen by Dr. Dighton, who found him extraordinarily improved; he was able to take food by the mouth, was rational, and looked as if he was now really going to recover. At 4 o'clock the next morning, January 18th, he took a sudden turn for the worse, became cyanosed, the pulse failed, and he died the same morning.

The only comment I have to make on the case is that we were disappointed with the antimeningococcic serum, which, as far as we could judge, produced no clinical improvement. On the two occasions on which the vaccine was given a notable improvement followed. The sterilization of the vaccine was effected by heating to 58 degrees C. for thirty minutes.

Treatment of Pneumonia in Children.—An interesting article, giving experience with cases treated while district physician for the Roxbury Dispensary, is presented by Harold W. Dana, in the Boston Medical and Surgical Journal. The routine which he followed in these cases was as follows:

1. Fresh air constantly. Often, in winter, a child can be kept better covered and warmer if it be bundled fairly tightly into a baby carriage or clothes basket, when it is to be put near an open window, than if kept in a bed.

2. Food. This is extremely important. If one is willing to take the necessary time and trouble, small amounts of liquids, or semi-solid food can be given to any child, and if repeated often, considerable nourishment can be given. Often the fact that a sick child does not wish food is considered by the mother as a sufficient reason for not giving the child any food.

3. Saline enemata. Long, slow, hot normal saline irrigations of the bowels once or twice a day are useful as a means of stimulation, to give water to the body, to reduce toxemia, and also for cleansing purposes. If necessary, calomel in divided doses was used for distention or constipation.

4. Cold applications to the chest. This was accomplished by wringing cloths out of cold water, applying them to the skin, covered over with newspaper to protect the clothes. These applications should be renewed when they become warm.

5. Bathing. These children received a tepid sponge bath, preferably followed by an alcohol rub, twice daily if the temperature reached 102.0 degrees F.

6. Brandy. When the temperature is high or long continued Dana is personally in favor of large doses of brandy, perhaps 20 to 50 drops every two hours for a child one to three years old. The brandy is better not given with food as it may make the child vomit, or may make the food objectionable to the patient.

7. In one case in which Dana suspected a streptococcus septicemia, as a sequel to the pneumonia, antistreptococcus serum was given twice, apparently with brilliant results.

8. Drugs. As a routine all of these patients were given ammonium chloride and syrup of ipecac, using the fluid extract of glycyrrhiza as a vehicle. For a child under a year he uses a quarter to a half grain of ammonium chloride and a qurter to a half drop of the ipecac each two hours. For all children over a year he gives a drop of ipecac for each year of the child's age each two hours, and a grain of ammonium chloride each two hours for a child from one year to twelve years old.

If the child is very sick, it is given tincture of belladonna, a quarter to a half drop up to eighteen months of age, and one to one and a half drops for older children each two hours.

A method Dr. Dana has found convenient for prescribing these drugs, is to add together the number of drops or grains of each ingredient desired in one dose, and then to order as many drachms of each to be put into the mixture as there were drops in each dose. For instance, for an eighteen months' old baby if he wishes to give a grain of ammonium chloride, a drop of belladonna, a drop and a half of ipecac, using five or six drops for the vehicle, he writes for the following mixture:

R	Ammonii chloridi	ʒ1	(—gr. 1)
	Syrupi ipecacuanhae	ʒiss	(—Gtt iss)
	Tincturae belladonnae	ʒi	(--Gtt i)
	Extracti glycerrhizae fluidi	ʒvss	(—Gtt vss)
			(Total, 8 drops.)

M. Sig. Give eight drops in a spoonful of boiled water every two hours.

As sheet anchors in case of need he uses, first, tincture of digitalis, based on a minim and a half dose for each year of age four hours when the heart action is weak and rapid; finally, as a last standby, he makes a solution of strychnine sulphate and gives large doses, one four-hundredth to one-hundredth of a grain every four hours, stopping this drug after a day or so, or as soon as he can, to hold it in reserve for further need.

Technique of Breast Feeding.—I desire to avoid a detailed discussion of the many points concerned in the technique of breast feeding, though a brief statement, outlining the concensus of opinion on this important topic will be attempted.

I. The young, inexperienced mother should be instructed in the most elementary details concerning nursing. She is shown how to retract the parenchyma of the breast from the nipple so that the infant's nose will not be buried in the mamma and respiration will not be obstructed in this manner. If she trains the baby to grasp the areola as well as the nipple, the milk flows more freely and the nipple is less liable to be traumatized and rendered painful. The nipples should be kept scrupulously clean, and may be washed before nursing using plain water at least not strong antiseptics.

II. Washing the baby's mouth is obsolete and has been generally abandoned.

III. As a rule the infant should be fed from only one breast at a time. Only in those cases where the milk is insufficient in quantity should both breasts be given at one time.

IV. Long feeding intervals are advised for normal babies—five or six feedings daily, though individual variation may be necessary in cases where the infant is ill or where the breast milk is insufficient.

V. The quantity of breast milk received by the baby at a single meal, varies within wide limits. The largest quantity ingested at one meal may be two or three times as great as the smallest quantity taken at one feeding on the same day.

VI. The food of the mother during lactation should be sufficient but not excessive. She should drink fluids in proportion to her thirst. The excessive drinking of milk and beer, as is so frequently recommended, is unnecessary, though if a woman is accustomed to partake of beer in moderation, no harm will come to the baby or its food supply.

VII. It is equally important to avoid underfeeding the nursing mother. Czerney and Kellar believe it an error to materially reduce the diet of a puerperal woman. They believe that a reduction of food and water may lead to lowered milk secretion.

VIII. Nearly every writer on subjects related to maternal nursing, has declared against the view that certain foods ingested by the mother are capable of producing disturbances in the infant through the breast milk. Sour foods, fruits, and gas producing vegetables may be eaten by the mother if they do not cause discomfort to her. They produce no changes in the composition of the breast milk.

IX. It is quite indifferent whether or not a baby is put to the breast during the first or second twenty-four hours. The amount of milk in the breasts during this early period is as a rule so small that it need scarcely be considered from a nutritional point.

X. Drugs may be transmitted to the baby by breast milk secretion, though the quantity eliminated in any case must be infinitesimally small.—Abt, in Detroit Med. Jour.

The Lange Gold Chloride Reaction on the Cerebrospinal Fluid in Infants and Young Children.—By C. G. Grulee and A. M. Moody (Amer. Jour. of Dis. of Child., Jan., 1915). The authors find that in cases of congenital syphilis included in this report that the cerebrospinal fluid reacts to the colloidal gold chloride solution in the lower dilutations, and with a marked degree of regularity in the dilutions of 1:40 and 1:80. A few cases of congenital syphilis give a reaction similar to that in paretic dementia. Those conditions which show a slight inflammation of the meninges or brain are most apt to give a reaction similar to that obtained in congenital syphilis, but these cases are not likely to be confused clinically with syphilis. The reaction obtained in tuberculosis meningitis are most intense in the dilutions of 1:160 and 1:320. It is probable that the more rapid the course of the disease the more apt it the reaction to occur in the higher dilutions. The authors consider Lange's gold chloride reaction a valuable aid in diagnosis.

THE TECHNIC OF GOLD CHLORIDE REACTION.

A series of small test tubes are used. In the first tube place 1.8 c.c. of a 0.4 per cent sodium chloride solution (freshly made from a stock of 10 per cent solution) and 1 c.c. in each of the succeeding nine. Then take 0.2 c.c. of the spinal fluid to be tested and add to the first tube, thus making a dilution of 1:10. This is mixed with 1 c.c. pipet. One c.c. is removed and added to a second tube, making a dilution in this tube of 1:20. This procedure is carried on throughout the series of tubes, the remaining quantity being thrown away. When the dilutions are finished there is 1 c.c. in each tube, and the dilutions vary from 1:10, 1:20, 1:40, 1:80, up to 1:5120 in the last tube. Then add rapidly to each tube 5 c.c. of the indicator, which is colloidal solution of gold. The making of the indicator requires the greatest amount of care. The method used is that described by Zsigmondy, which briefly consists of mixing a dilute solution of gold with potassium carbonate and reducing at the boiling point with formaldehyde. The indicator when good is absolutely clear, is red in color, with some yellow and a tinge of purple. If kept in a clean glass (Jena) flask away from the light it will remain unchanged for months.

Stoeltzner's Casein-calcium Milk in Summer Diarrheas of Infancy and Early Childhood.—During the past summer W. L. Kost (Arch. Pediatrics, 1914, xxxi, 849) has used casein-calcium milk in the treatment of fifty-six cases of summer diarrhea. No patient ill less than three days is included in this series. Age varied from three and one-half months to two and one-half years. Many of the children were rachitic, anemic, poorly nourished, underdeveloped and underweight. The original formula was adhered to as a rule; dextrimaltose was rarely added before the third day; in about 50 per cent. of the cases, cereal decoction was employed instead of water; small amounts were given at four-hour intervals; water ad libitum if necessary; the total quantity of food was increased from 2 to 4 ounces daily, depending upon the condition and age of the child. It was well taken by all except one. This was a child of two years, extremely difficult to manage my the mother. This milk was given for periods of time varying from four days to several weeks. No vomiting occurred. A district nurse visited all of the out-patients and demonstrated its preparation; the mothers experienced little difficulty in making this food after being shown once. All cases showed improvement in about four days, in most children in two days assuming a yellowish color, semisolid, one or two daily. About 49 per cent. gained and 21 per cent. remained stationery; in 30 per cent., the weight could not be observed on account of the very irregular attendance of the mothers. On account of the simplicity of its preparation and inexpensiveness, casein-calcium milk is particularly useful in the management of nutritional disturbances applying to out-patient departments for treatment. It may be readily used in those nutritional disturbances where Finkelstein and Meyer's protein milk is indicated, but cannot be employed on account of its expense or taste.

Hunger of Normal Breast-Fed Infants.—It is known that infants may live a number of days without food. This occurs in congenital stenosis of the esophagus. In pyloric stenosis the infant may be practically without food for days and weeks. It has been shown by observation on animals that if they are allowed to starve, death will occur when they have lost two-fifths of their body weight. So far as infants are concerned, it has been noticed that if they lose 30 per cent. of their weight, death is almost inevitable, though this would depend in part on the previous state of health of the infant.

A previously normal baby would offer greater resistance and succumb less rapidly than a sick baby. An ordinary normal baby may be starved a day with scarcely any bad effect. On the second or third day of starvation the weight curve begins to fall, though the effects of hunger have a less marked influence on the weight curve of a normal baby.

It may be assumed that normal breast milk contains all the necessary ingredients to make the baby prosper. This is true until the eighth or ninth month of life. After this time it becomes a question of whether the nutritive quality of breast milk is sufficient for a normal baby. We know that infants who are nursed exclusively after the ninth month are likely to develop anemia, and analyses have shown that breast milk is deficient in iron and calcium. The same is approximately true of calcium, and it has been thought that rickets under certain instances may occur in breast-fed infants because of the calcium deficiency. Czerney has suggested that the new-born organism comes into the world with a calcium depot and an iron depot, that is a reserve supply stored away for times of need. The storehouse is supposed to be the liver, and in this way the deficiency in these mineral substances is supplied when the occasion demands. This thought is based on exact chemical analyses, though the hypothesis concerning the use to which the depots of iron and calcium are put requires further investigation.

In a word we may say that the energy requirements of the infant is 100 calories per kilo, or 45 calories per pound. If the quantity of food provides for considerable less calories than is indicated above, the foundation is laid for underfeeding.—Abt, in Detroit Med. Jour.

Asthma in Children: Its Relation to "Egg Poisoning."—During the past two and one-half years F. B. Talbot (Bost. Med. and Surg. Jour., 1914, clxxi, 708) has studied eleven cases of egg anaphylaxis. Ten of these eleven cases had had eczema some time during infancy or childhood. Six of the cases had severe asthma. These cases were studied in the first place to see if there was any connection between eggs in the food and the asthma; and in the second place a skin test was made according to Schloss to determine if the individual was sensitive to eggs. Although the underlying cause of asthma was anaphylaxis to egg albumen, the writer emphasizes the fact that egg albumen is not the sole cause of asthma. Hay fever, or anaphylaxis to the pollen of flowers, was a complicating factor in some cases, horse asthma in others, and the last case was complicated at first by an anaphylaxis to beef juice. The family history suggests that a sensitive condition of the blood may be transmitted from one individual to another. The theory receives support in the fact that this transmission of sensitivity of the mother to her offspring has been noted in animals. If this is not transmitted directly, a predisposition toward sensitization may be inherited. It seems more probable that the sensitivity may be acquired. The diagnosis is made from the history and by the specific skin reaction. When the diagnosis is made, one of two courses may be pursued: either all egg may be excluded from the diet, thus removing the cause of the asthma; or the patient may be immunized to egg white albumen. The latter course seems to be the most logical because it is almost impossible for a person of this type to absolutely exclude eggs from their diet. Small doses of egg white should be given in capsules, the dose being gradually increased until the patient is immunized.

Great care should be taken to start below the limit of tolerance and to gradually work up from this point. Usually it is safe to commence with 1 milligram of egg white a day, but occasionally even this dose is too large. It seems probable that those patients suffering with horse asthma will have to be immunized subsequently to horse serum. The same statement applies to other proteins which may be found to have a connection with asthma.

Neuropathic Diathesis.—Neuropathic infants are usually the offspring of nervous parents. The family history relates of tics, or migraine, or nervous headaches, dyspepsia, neurasthenia or hysteria or paternal or maternal neuropathic constitution. The infant manifests his symptoms during the first days of life. He is extremely restless, literally wears himself out by his crying and energetic movements; he is awake when he should be asleep, and on account of his restlessness and crying is given food before his digestive apparatus can tolerate it. This infant does not gain in weight. He does not prosper even at the breast; his sleep is not sound; he is easily frightened and jumps at the slightest noise; he is precocious and desires to be entertained. It is difficult to train him to regular habits of sleeping and eating, and on the part of his digestive tract he manifests numerous symptoms, such as colic, flatulency, regurgitation of gas, singultus, vomiting. The colic of neuropathic origin is the most difficult to manage. The infant, distracted himself, causes pandemonium in the neuropathic family circle and exhausts the resources of the nurse and the medical attendants. The point that interests us the most at this moment relates to the difficulty of breast feeding and failure to gain in strength. If the baby is weaned as he frequently is, he often fails to thrive satisfactorily on artificial food, and the food is frequently changed, or if a wet nurse is secured, his colic and nervousness continue. One wet nurse after another is tried, all wet nurses, all doctors, all foods are condemned, the poor, innocent baby, the fond family and friends say, is being permitted to suffer or to starve. Will they believe us if we tell them that the baby is paying in his cradlehood the price (in most instances) of over-culture, over-civilization or at least the unhygienic living of his progenitors. The neuropathic parents have begot a neuropathic baby.—Abt, in Detroit Med. Jour.

Sprue Treated by Emetin Hydrochloride.—By Ferdinand Schmitter (Jour. of the A.M.A., Jan. 2, 1915). Schmitter has reports of twelve cases of sprue treated by hypodermatic injection of emetin hydrochloride, 1-2 to 1 grain daily. All of these cases improved greatly. He reports in detail the one case which he was able to follow up for a long period. The patient had been ill seven years, during which his weight fell from 216 to 106 pounds. All the characteristic symptoms of sprue were present. He was given 1 grain of the drug daily for five days. Steady improvement of all symptoms began immediately after the treatment; eleven months later the patient's weight was 177 pounds and all evidence of the disease was gone.

BOOK REVIEWS

The Difficulties and Emergencies of Obstetric Practice.—By Comyns Berkeley, Obstetric and Gynecological Surgeon to the Middlesex Hospital; Surgeon to in-patients, Chelsea Hospital for Women; Senior Obstetric Surgeon, City of London Lyin-in Hospital; Gynecological Surgeon, Eltham and Nottingham Hospital, and Victor Bonney, M.A., M.D., M.C., Assistant Obstetric and Gynecological Surgeon to the Middlesex Hospital; Lecturer on Practical Obstetrics, Middlesex Hospital Medical School; Surgeon to the Chelsea Hospital for Women. Second edition. 780 pages, with 302 illustrations. Handsome buckram binding, $7.50. P. Blakiston's Sons & Co., Philadelphia, Pa.

The subject matter of this volume is made up chiefly from the personal experiences of the authors; and the views expressed and the methods advised are founded chiefly on actualities. Where this has been inadequate, the authors have incorporated the opinions of authorities in whom they place the most reliance on such subjects. The main object of the work is to afford a guidance in plain terms to the practitioner when he meets with difficulties in this field of practice, and at the same time to give him directions for overcoming difficulties and emergencies that attend obstetric practice. To that end the physiology and the management of normal pregnancy, labour and puerpery are omitted as not being germane to the purpose, since there are many valuable and excellent works giving guidance in the handling of normal cases.

It is a pretentious volume of nearly 800 pages with more than 300 illustrations covering every phase of abnormalities, difficulties and emergencies which are liable to come up in obstetrical work. In the second revision much new matter has been added and the text thoroughly revised and brought up abreast of the latest teaching and practice in this special field of work. Many of the chapters deserve more than a passing mention, but the space of this review will not permit mentioning all of the good points which impress us so favorably. One chapter that deserves more than a passing mention is on insanity connected with child-bearing. Another chapter of great interest is Diseases and Injuries of the newborn child. The chapter devoted to rupture of the genetal tract is very succint to the point and of a great value to every physician who handles obstetric cases. It is such a valuable book that it should be on the bookshelf of every practitioner who makes any pretension of attending women in labor. We feel that we cannot too highly endorse this most excellent work on the subject of difficulties and emergencies in obstetric practice.

Diseases of the Skin.—By James H. Sequeira, M.D., Lond. F.R.C.P., Lond. F.R.C.S., Eng, Physician to the Skin Department and Lecturer on Dermatology at the London Hospital; in charge of Queen Alexandra's Department for Light Treatment; Consulting Dermatologist to the Radium Institute; Editor of the British Journal of Dermatology. Handsome buckram binding, 623 pages, illustrated with 48 plates. Cloth binding, $8.00 net. P. Blakiston's Sons & Co., Philadelphia, Pa.

The subject matter for this volume had its inception in a course of lectures delivered in the Skin Clinic of the London Hospital. It has been the outgrowth of the author's nine years' experience in teaching the subject of diseases of the skin. The work is primarily designed for the student and general practitioner. The author devotes special attention to diagnosis and treatment, omitting historical references and discussions of debated or unsettled points. The general arrangement of the chapters is on etiological lines, where such a classification has been impracticable, diseases are grouped according to their morphological characters. While such an arrangement may be away from the beaten path, the author has found it exceedingly useful in teaching.

The illustrations with few exceptions are from the author's cases photographed in private and institutional practice. These photographs in a great many instances have been reproduced in three colors which add very much to their value in depicting a true picture of the diseased condition. For the convenience of students and physicians desiring to study the subjects in more detail, the author has appended references to recent articles, and especially to the literature of the subject, pointing out where it may be found. The author has fully embodied the latest advances which in this field are exceptionally important. Many well-defined new diseases which have recently been differentiated are recorded as well as any new facts discovered concerning the nature of previously known diseases. The results of research in the etiology of cutaneous diseases are plainly set forth and the new methods of diagnosis and treatment of proven value are included. For a full presentation of therapeutic measure and functions for employment this work will be found a substantial help in dealing with this class of cases. This work will be found of peculiar value to the man who seeks safe guidance in handling the puzzling cases of every-day practice without specializing or entering very deeply into the subject.

Chemistry of Food and Nutrition.—By Henry C. Sherman, Ph.D., Professor of Food Chemistry, Columbia University. New York: The Macmillan Company. Cloth, 350 pages, $1.50.

This work is the outgrowth of many years' experience in teaching the subject to collegiate and technical students. The author does not attempt to present a historically or technically critical treatment of the subject, but on the other hand to give a correct idea of the nature and validity of the evidence on which our present beliefs are based. The main purpose of the author seems to have been to present the principles of the Chemistry of Food and Nutrition with special reference to the food requirements of man and the consideration of the present teachings of the nutritive values of food.

The subject matter of this volume comprises the following: Chapter 1, The Organic Foodstuffs; Chapter II, The General Composition of Foods and Action of Ferments; Chapter III, Course of the Food Through the Digestive Tract; Chapter IV, Fate of the Foodstuffs in Metabolism; Chapter V, Fuel Value of Food and the Energy Requirements of the Body; Chapter VI, Conditions Affecting the Total Food Requirement; Chapter VII, Protein Metabolism and the Protein Requirement; Chapter VIII, Food Habits and Dietary Standards; Chapter IX, Iron in Food and Its Functions in Nutrition; Inorganic Foodstuffs and the Mineral Metabolism. Criteria of Nutritive Value and Economy of Foods.

This work is not only of value and service to the physician and students of medicine, but will be found of service to general readers whose main interests may lie in other fields, but who appreciate the importance of food and nutrition as factors in hygiene and preventive medicine.

The volume closes with several tables as an appendix showing the ash constituents in percentage of edible foods, and the ash constituents in 100 Calorie portions of foods and the edible organic nutrients and fuel value of foods.

Infant Feeding, Its Principles and Practice.—By F. L. Wachenheim, M.D., Attending Physician Sydenham Hospital and Mount Sinai Dispensary, New York City. 12mo, 340 pages. Lea & Febiger, Publishers, Philadelphia and New York, 1915. Cloth, $2.00, net.

In the preliminary chapters a clear presentation of facts regarding infant digestion and metabolism opens the way to easy grasp of the detailed information. A point of interest is the author's demonstration of the extent to which the capacity of the infant's stomach is underestimated. Enlightening data is presented regarding protein, carbo-hydrate, salt and particularly fat metabolism. After reviewing fully the problems of breast feeding, Dr. Wachenheim concludes that even in cases of serious digestive derangement, if the supply is adequate, the only safe procedure is to keep the child at the breast.

The bacteriology of milk; milk infection; the constituent elements of cow's milk and the essential difference between it and human milk; milk regulation and the feeding of whole milk, are treated at length. While the basis of the discussion of milk modification is highly scientific, the reasoning is so logical and the conclusions so clearly stated that the practitioner cannot but find this section useful when called upon to draft a series of formula, while the specialist will find herein much interesting new material based on the author's study and observation.

He rejects top milk method as inaccurate, as well as characterized by inherent defects. He also makes out a strong case against the percentage method, and recommends the Jecobi system of simple dilutions. The formulas presented are readily adaptable to the individual requirements of the case in hand. The cause, symptomatology, diagnosis and treatment of digestive and metabolic disorders are considered at length. A section on the feeding of older infants up to four years brings the work to a logical conclusion.

Blakiston's Quiz Compends.—A Compend of Obstetrics by Henry G. Landis, A.M., M.D., late Professor of Obstetrics and Diseases of Women in Starling Medical College, revised and edited by William H. Wells, M.D., Assistant Professor of Obstetrics in the Jefferson Medical College. Ninth Edition. Illustrated. P. Blakiston's Sons & Co., 1012 Walnut street, Philadelphia, Pa. Cloth, $1.00.

The main object of the author in the preparation of this little book was to furnish a useful compend and Quiz-book for the Medical student, and also, by the system of question and answer, to bring out the more important facts in obstetrics more clearly than can be done in the method of continuous composition. On many points it is difficult to determine what is the "received doctrine," except by the numerical weight of authorities. The author has throughout the work maintained a judicious eclecticism, instead of undertaking the task, impracticable within the limits of the book, of recording all the various and more or less received teachings of all authors. In the present revision a number of changes in arrangement with the addition of considerable new material has been incorporated. In the study of anatomy of the female genital organs important material has been added. The operation of vaginal Caesarean section has been described, as well as several of the minor operative procedures in pregnant and parturient women. This series of Quiz Compends are well arranged and are the best line of text books that can be placed in the hands of medical students.

PEDIATRICS

Vol. XXVII APRIL, 1915 No. 4

EDITORIAL

PUBESCENCE, ADOLESCENCE AND ENVIRONMENT

The law of growth in the human body is one which has not been always considered in relation to the development of girls. The energies of the body rise and fall in each individual with a certain rhythm. Each swell of the physical growth is designated to bring about certain morphological and functional conditions; and when these conditions are not secured at the time nature is accustomed to bring them about there is absolutely no possibility of their completion and perfection in subsequent years. The maturity of the sexual apparatus and its function in the girl must be at that stage of development known as puberty. It is of all periods to the woman the most important, for her future health, both physical and mental. All the intelligence and care that is possible for mothers and physicians to bestow upon her should be given at this time. Not only motherhood and subsequent health, but sanity and life long happiness are dependent upon the perfection of pubescent growth and function. It does not seem unreasonable, therefore, that the customs and predjudices for the time should be laid aside in considering the proper training of the girl in and before pubescence.

Just before reaching the pubescent period the girl is at the threshold of an ordeal marked by its vicissitudes of development and characterized by the most important metamorphosis in the physical, intellectual and moral nature of female existence. It is a period paramount to all others in a woman's life. The environments surrounding her at this time reflect her future destiny. Here are sown the seeds which bear fruit in womanhood. Here is the soil in which is to be nurtured the embryo of succeeding generations. Here are gathered the basic elements upon which the superstructure of maturer years is founded. It is the physician's duty as well as his honored privilege to guide such an one through the most critical period of her existence.

During the period of adolescence, which begins at the completion of puberty, the girl can be put down more closely to intellectual work; but no more mental work should be required of her than will enable her to enter college at eighteen. At this age the mind is more active and receptive and acquires knowledge more readily. In no case should the brain be developed at the expense of the physical organization. The late Dr. Alexander J. C. Skeene once said: "Usefulness should lie at the foundation of a girl's education, and that education should aim to make a woman in all that the name implies; that a knowledge of how to be attractive and agreeable is a power of great value to a woman who wishes by charming and attracting those who are to guard her, and that music, art and the modern languages are far more necessary to a woman than to man; that personal beauty and becoming dress are too often obliterated from the girl educator's calendar."

Why are the women today more prone to diseases of the genital tract, and to deficiency of lactation, both evidences of an inferior genetic power, than were their mothers and grandmothers, unless from some change of environment? We see in it evidence of defective pubescent nutrition, and trace it, in part at least, to the high pressure of modern life which today throws upon growing children new social duties, and even new physical labors, with constant diversion of energy into channels of immediate activity, which should be potentialized. An objection which will at once be raised is, that the gynaecologist is concerned with disorders of an infectious origin, and that the organisms which affects the adult could hardly be much affected by attention to their hosts during puberty and adolescence. Directly, certainly not, but the soil can be, and in the infectious disorders it is the soil or nutritive element—which is much more in need of study than the invading organisms themselves. The ideal life of the child is one in which she comes in contact from necessity and pleasure with all the things which go to make up the physical necessities and comforts of the common life.

It is the duty of the profession to teach their patients, and the parents of their patients especially, that they are to keep their bodies clean, and when clean, they will have clean functions to perform. It is as necessary for a girl to menstruate as it is to breathe, and she should be educated to breathe properly, and also to menstruate properly. It can be done and it is false modesty not to teach her such things.

The girl at this period of her life, as we have viewed her from various standpoints, is one of the most interesting objects of study in human nature. She is earth's angel, poised upon the pedestal of innocence and virtue. She is the passion flower of youth, just budding out from the stems of infancy and childhood, enriched by the gentle showers and warming sunshine of maternal influence. If the flower wither in its growth or degenerate into an inferior species, it is due to the deterioriating effect of unwholesome environment. Nurtured in the balmy atmosphere of domesticity, and developing into the fulness of maturity under the ripening influence of American institutions, if it fall prematurely and lose its beauty and splendor, the florist having it in charge has failed to perform the functions of his office. If its petals be broken and its tender form bent so low as to kiss the earth from which it sprang, then its admirers have lost their interest and permitted rank weeds, and plants of coarser nature to crowd it out until its charms and fragrance are irrevocably lost.

THE PHYSICIAN'S DUTY IN DIRECTING THE DIET OF BREAST AND BOTTLED FED INFANTS

As that season of the year is fast approaching when digestive and intestinal disturbances in infants and small children become prevalent, we deem it our duty to call attention to this subject and to impress upon our readers the great importance of the necessity of giving careful study to the baby's diet.

The problem of artificial feeding is one of growing importance, especially to the family physician and obstetrician, the latter of these is especially derelict in his duty if he fails to inform himself upon the great advances which have lately been made in this direction. The cause of much of the indigestion, inanition and marasmus seen during infancy is laid during the first few weeks of life, but the importance of starting the diet right from the very outset is not yet sufficiently appreciated. An attack of indigestion must be regarded as a serious misfortune for a child; the younger the child, the greater the misfortune. A single careless feeding may produce an acute indigestion which will be the starting point of a long series of digestive disturbances. A few weeks of improper feeding may so derange the digestive processes that the infant does not regain its normal digestive power during its first year.

The error is quite too common of looking upon the body as a machine, any derangement of which will be set right by simply removing the cause. The human body is not a lifeless machine, but a combination of living tissues, each of which has its own functions to perform. Stopping the original cause of disturbances does not, therefore, usually stop the symptoms. A child that has been improperly fed can rarely be set right at once by the administration of proper food. If the indigestion is due to bacterial action, or to a vegetable ferment, it will probably continue for a certain time under the most favorable feeding, because the germ or the ferment remains to act upon everything that is introduced into the stomach. An intestinal catarrh, once begun, is very slow and difficult of cure, and will prolong the indigestion.

When the digestive secretions are impaired, or undergo any decided change, they do not at once recover themselves or adapt themselves to changed conditions even if those conditions are perfection itself. The nervous system, notably that portion which presides over the digestive functions, readily acquires habits and peculiarities of action which continue after the causes which generated them have been removed. The debility and anemia which quickly follow in the train of improper diet are felt by the digestive organs in common with the rest of the body and impair their action long after the cause is removed.

Error is constantly being made in allowing new-born babies to have too much food, to have it at irregular intervals, and without proper preparation. One of the most common errors is the use of too strong milk mixtures. During the first two weeks the baby should be fed every two hours by day and should not have more than two feedings between 10 p. m. and 7 a. m. With the beginning of regular feeding on the third day, the amount of each feeding should not be more than one ounce, which may be increased to two ounces by the fourteenth day. In exceptional cases two and one-half ounces may be given.

Even in the case of breast-fed babies the doctor has an important duty to perform in giving rigid instructions regarding regularity of nursing. the duration of each feeding, and the management of the breasts. The importance of engendering right habits in the breast-fed infants is almost as great as in the case of the artificially fed. The well-being of the infant, as well as the well-being and comfort of the mother, depend greatly upon the habits formed during the first few weeks. Whether the baby be breast fed or bottle-fed the physician is derelict in his duty if he neglects to start the diet right.

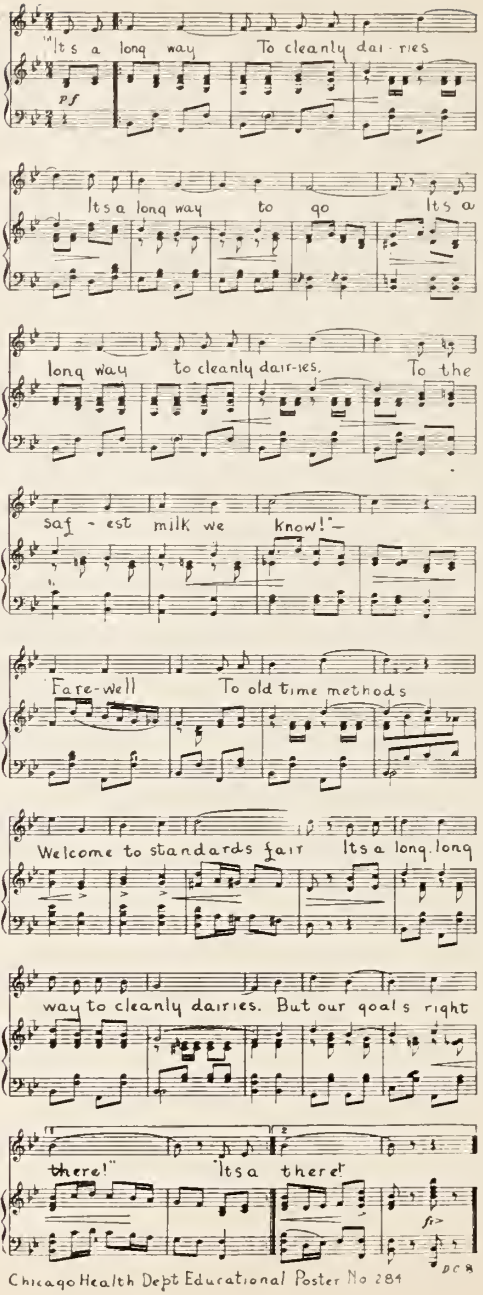
THE CHARLOTTE MEDICAL JOURNAL

The Charlotte Medical Journal has issued a beautifully illustrated brochure describing the Journal and its home. The Journal has extended its influence remarkably under the able management of Dr. Edward C. Register, who is to be congratulated upon the development of the Journal and the establishment of its well appointed home so well described in this booklet.

A SONG FOR CHICAGO:

Safe Milk for Baby.

With apologies to the author of Tipperary.


"It's a long way To cleanly dairies
Its a long way to go Its a
long way to cleanly dair-ies, To the
saf - est milk we know!"—
Fare-well To old time methods
Welcome to standards fair Its a long, long
way to cleanly dairies. But our goal's right
there!" "Its a there!
pf
fz>
DC 8

Chicago Health Dept Educational Poster No 284
By Dr G B Young

CHAIRS FOR CHILDREN

There has been much agitation over the misfitness of school seats and desks, and there has doubtless been more or less correction of these sources of bad posture and of permanent deformity. Little or nothing is said, however, concerning the seat used in the home; the human sprout is often so tender that anything which causes it to be inclined from the normal must be taken into account. The average child, who cares little or nothing for books, is influenced little by either school or home seats, but the child who likes to read. and who is disinclined (always with good reason, be it said) to active muscular exercise is the victim of ill shaped seats in both the school and the home. Of what use is it for the general practitioner or orthopedist to prescribe corrective exercises for stooping posture and round shoulders, if for many hours every day the patient is to occupy a framework which distorts the skeleton, and renders nugatory all therapeutic efforts?

Often there is not a comfortable or well fitting chair in the house for an adult, and for children there is no provision. Chairs are usually of two general kinds, big and little, those for adults and those for children of from two to five years. Styles in chairs vary, and the chairs we find in the home are practically always of the wrong shape for the growing child, and usually for the adult. To fit, a chair must conform in the curves of its back to the normal, but not exaggerated curves of the sitter. It must be of such a height that the feet can be planted comfortably on the floor and yet the knees will not be raised high above the level of the hips, and it must not be so deep that the pelvis does not readily come in contact with the back. The inclination should be such that the back of the sitter is really supported and not pushed forward when the body is set against it.

Manufacturers have made office chairs for adults which support the back well, some of them adjustable, and perhaps the reason why there has been no effort to fit children is that there has been no demand. Perhaps some day, the dealer, if he cannot fit a child, will be able to take his measure for a suitable home seat, or at least furnish one that has an adjustable support. Meanwhile perhaps we can make some of our present chairs fit. This can be done by adjusting a suitable padding to the back, by using a stool for the feet, or by sawing off part of the legs if the chair is too high, or by piecing out if the chair is too low, and by sawing off the front of the seat, or padding the back if the chair is not too deep. The produce of this overhauling may not be a thing of beauty, but that matters little so it is a thing of comfort and body preservation.

A normal child, at least in a misfit chair, is always for the time being, deformed; a normal child, at rest in a chair that fits, always assumes a correct posture. The child, unfortunately, is very uncomplaining about some things, and makes no fuss if the seat is not what it should be. Also, he makes no fuss if the table at which he works is too high or too low, or his books too heavy to be comfortably supported, if the light by which he reads is poor or badly placed. These matters should be taken into account in arranging conditions conducive to good posture, though they are of secondary importance.

Physical education is nothing more or less than the establishment of correct bodily habits, and the habit of assuming good posture is a most important part of the physical education of every child.—Editorial, New York Medical Journal.

PEDIATRICS

ORIGINAL ARTICLES

THE MODERN TREATMENT OF DIGESTIVE DISTURBANCES OF INFANCY

BY PROFESSOR DR. WILHELM STOELTZNER
Director of the Children's Dispensary of Halle University.

In no branch of pediatrics has so remarkable a therapeutic advance been made as in the treatment of infantile digestive disturbances. There is no doubt that infant mortality rates, and relatively the general mortality rate, will be considerably improved as these modern measures become more and more recognized by the general body of medical practitioners. The therapy of the infectious catarrhs of the colon shows comparatively small improvement although the etiology of these conditions has been clearly explained by bacteriological investigation. The remedial measures still consist in the administration of several doses of castor oil initially, followed by a milk diet rich in carbohydrates. The colonic evacuations usually become changed into dyspeptic stools, the further treatment being identical with that used in the primary dyspeptic condition.

The other and common digestive disturbances may be divided for practical purposes into two classes:

1. Those with toxic symptoms.
2. Those without toxic symptoms.

Alimentary intoxication previously known as cholera infantum or enterocatarrh is generally characterized by diarrhœa, fever, cerebral symptoms (restlessness, etc.) and respiratory disturbances. Since the alimentary nature of the malady has been recognized, its treatment has been more successful. Complete deprivation of all food generally removes the toxic phenomena within 24 hours in all but the very severe cases. The children are given at first boiled water or weak fennel tea, without milk or sugar, saccharin being allowed eventually. With the disappearance of the toxic symptoms, the dietetic treatment resolves itself into that for simple dyspeptic conditions. It is necessary, however, at the beginning to measure carefully the quantity of food allowed with the water.

The greater majority of the digestive disturbances of infants is dyspepsia presenting no toxic symptoms. We would include under this heading colitis and alimentary intoxication after the acute initial stage has been overcome.

The great advance in the appreciation of the nature of dyspepsia is due to the recognition that abnormal fermentation of carbohydrates in the intestine is the predominant etiological factor. Although it is a fact that overeating, enteral and parenteral infections predispose to the development of dyspeptic conditions, the decisive factor is always an induced intolerance for carbohydrates in the intestines, producing abnormal fermentation.

Moreover the so-called fatty diarrhoea in which the stools contain large masses of neutral fat and free fatty acids is likewise a dyspepsia primarily caused by an abnormal fermentation of carbohydrates in the intestine.

Up to a few years ago the treatment of dyspepsia consisted generally in withdrawing all food for 24 hours, substituting boiled water and weak fennel tea only. Following the first day of a pure water diet, thin gruel or flour decoction without milk was then given until the stools improved. Milk was then carefully added and cautiously increased in quantity. No uniform results followed this method of treatment. Many cases were cured, but only after prolonged treatment and with considerable loss of weight. Unsatisfactory results were likewise common, and those ending fatally were frequently cases in which the dyspepsia was induced by an exclusive or predominant carbohydrate diet.

This old method of treating dyspepsia has now been completely abandoned and we now know that abnormal carbohydrate fermentation in the intestines is the primary cause of the disturbance in dyspepsia. Gruel and flour even without the addition of sugar are pure carbohydrates and as such are actually not suitable as dietetic measures in dyspeptic conditions notwithstanding the many favorable results which have been obtained from their use. Thin gruels and flour decoctions without milk are a hunger diet, and owing to this factor the favorable results are obtained in spite of the carbohydrate content because of the small amount of the diet administered. As a fact the children are freed from the dyspepsia by inanition which in its turn explains the great loss in weight which occurs. The great loss of weight is not the only mischief done by this old method of treatment, because the inanition which results produces acutely an intolerance for the usual artificial foods in addition to that induced by the dyspepsia itself, and the further development of the children is seriously endangered.

Fortunately within recent years a dietetic measure which is much more reliable and cures dyspepsia in a shorter time has been devised. Moreover it ensures a sufficiency of food so that the weight of the children is considerably increased during the treatment. The principle of the treatment consists in the transformation of the dyspeptic stools into soap stools. Soap stools and dyspeptic stools are antithesis. The dyspeptic stool is abnormally frequent, thin, decomposed, oftentimes green, and contains more or less mucus, is acid in reaction, and when dried contains but 10 to 15 per cent soap. The soap stool is usually evacuated once a day, is consistent, dry, very light in color, alkaline in reaction, free from mucus, the dry substance consisting of 60 to 75 per cent soap, mostly lime soap. The dyspeptic stool is the end product of an abnormally strong, acid fermentation in the intestine, the soap stool of a distinct alkaline digestion. Fermentation and digestion are antithesis. The appearance of the first soap stools show that the dyspepsia has been overcome. With the method now used it is not a difficult matter to change the dyspeptic stools quickly and safely, without exposing the children to the danger of insufficient nutrition. The carbohydrate content of the food is greatly reduced so as to lessen greatly the occurrence of fermentation, and as there is a deficient power to absorb fats, the fat content is likewise reduced. There is however, adequate power to digest proteids and to make up in caloric value the albumin content is therefore considerably increased and furthermore the increase stimulates digestion. Lime is added to overcome the acidity and induce the formation of soap stools. These are the salient characteristics of Eiweissmilch invented by Finkelstein and his work has been justly recognized as a great advance.

Eiweissmilch has many physical objections. Its composition is constant and it does not lend itself to alteration for individual adjustment according to the characteristics of the patient and his symptoms. The cost is high and out of the reach of those cases in which it is most needed. Of less importance is its inconvenient form. Furthermore, its insipid taste and unfavorable appearance make it frequently objectionable, especially to older children. It can only be made by one skilled in its manufacture.

Many difficult technical details had to be overcome before the author found it possible to produce a casein-calcium in powder form which, when dissolved in boiling milk, produces an Eiweissmilch. Its dilution affords the necessary reduction of the milk sugar content, while the lime and casein produce the Eiweissmilch action This casein-calcium, which bears the trade name Larosan, is, so to speak, the active principle of Eiweissmilch in powder form, reduced to the most simple formula.

Larosan possesses many advantages over Eiweissmilch, especially in private practice. It is a light, dry powder, easy to handle; the finished product can be made in a few minutes by anyone in the home, looks like ordinary milk, contains no coagulated casein and is agreeable in taste. Furthermore, being cheap in price casein-calcium milk can be used by persons of very moderate means. Sometimes without any addition of carbohydrates to casein-calcium milk the increase in weight is satisfactory, which is not the case with Eiweissmilch.

The indications for this preparations include all the acute and chronic dyspepsias because it is possible by its means to adjust the dietetic therapy to the individual requirements according to the nature and severity of the case. In most cases of dyspepsia casein-calcium milk (1 pint milk, 1 pint diluent and 2-3 oz. Larosan) will be serviceable. This may be called standard casein-calcium milk.

In very young children, in debilitated children with severe digestive disturbances, it is best to initiate treatment with casein-calcium one-third milk (1-3 quart milk, 2-3 quart water, 2-3 oz. casein-calcium). Casein-calcium one-third milk is also indicated in cases of alimentary intoxication and should be administered as the first food to follow the initial water diet as soon as the toxic symptoms disappear, commencing with small quantities, 2-3 fluid oz., 5 times daily.

In older children with dyspepsia casein-calcium whole milk (1 quart milk and twice 2-3 oz. Larosan) has proved effective. The thin stools frequently become converted within 24 hours after the administration of this food.

Milk with a moderate addition of Larosan (2-3 oz. per quart of milk) furthermore yields satisfactory results in older infants suffering from rickets and likewise in children who are in a debilitated nutritional condition and who cannot tolerate milk in sufficient quantities without the addition of Larosan.

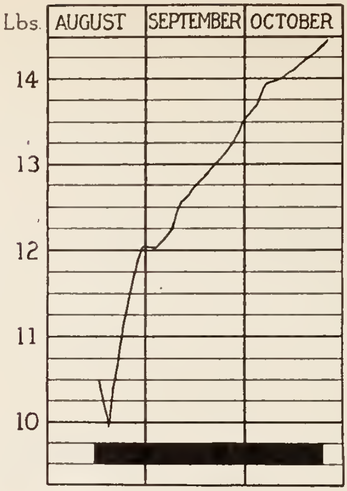
In the management of older children it will often suffice to give one-quart casein-calcium whole milk daily in addition to the mixed food. An increase in weight of 2½ pounds and more within one month is not unusual.

Clinical Cases.

Case 1. Kurt Krahmer, born July 26, 1912. Vomiting and diarrhoea commenced May 29, 1913. Admitted on June 2, 1913. Beginning with June 3, casein-calcium milk (half milk, half diluent), since June 5 consistent stools; on June 22 dismissed, cured, with marked increase of weight.

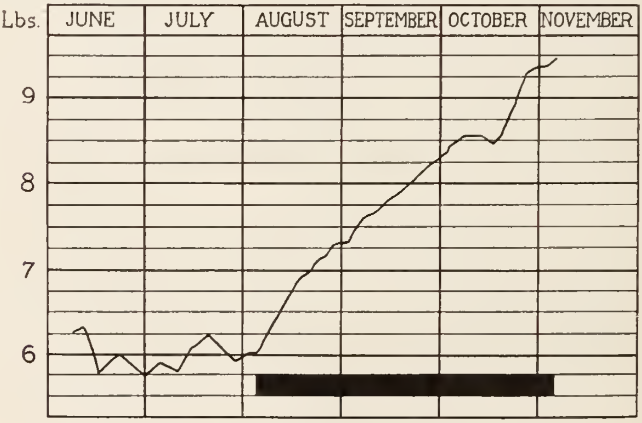
Case 2. Herbert Kummer, born May 23, 1913. Admitted June 17, 1913, suffering from dyspepsia. Beginning June 18, casein-calcium milk. The stools immediately became consistent. Dismissed July 2, cured and showing large increase of weight.

Case 3. Walter Plewa, born February 20, 1912. On August 17, 1912, stricken with severe alimentary intoxication. Tea at first and beginning on August 19, casein-calcium milk in increasing quantities (recent experiences show that in similar cases it is better to commence with casein-calcium one-third milk without addition of sugar). On August 21, consistent stools, striking recovery (see chart).



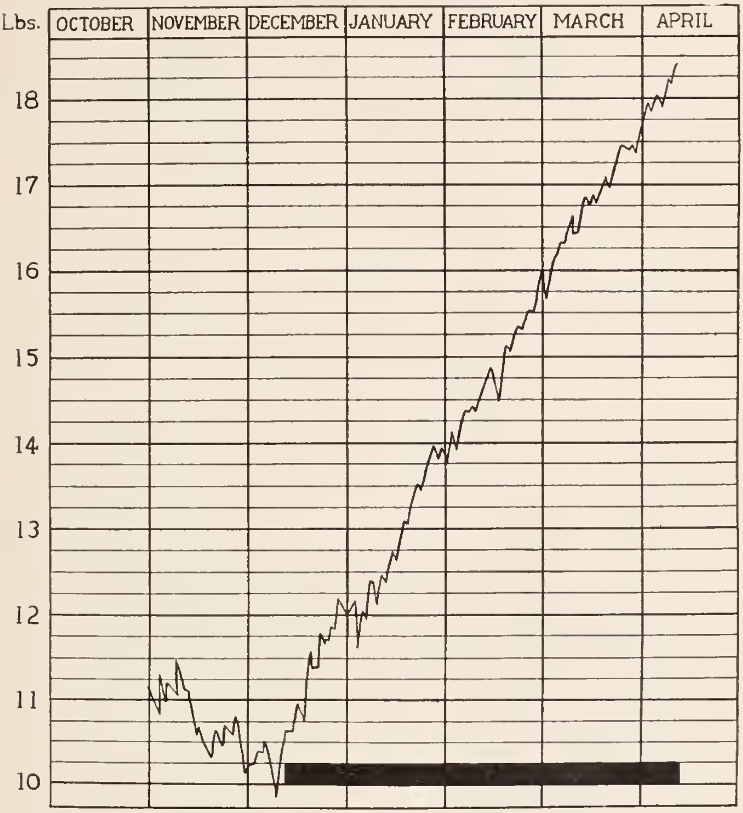
Case 3

Case 4. Paul Fiedler, born June 5, 1912. Admitted June 13, 1912. Until August 4, one-third milk with gruel; beginning with August 5, casein-calcium half-milk. On October 4, grippe with parenteral dyspepsia. Cured and dismissed November 3. (see chart).



Case 4.

Case 5. Charlotte Zavettori, born July 2, 1912. Admitted October 30, 1913, because of severe rickets, dismissed April 17, 1914. Therapy: Phosphorized cod liver oil. In addition to mixed nutrition at first malt soup, beginning with December 11 casein-calcium whole milk (2-3 oz. casein-calcium per one (quart milk). Following the use of casein-calcium whole milk, a marked increase in weight occurred and in addition a considerable improvement in the rachitic symptoms (see chart).



Case 5.

LITERATURE

1. Stoeltzner: Münchner Med. Wochenschrift, 1913, No. 6.
2. Forcart: Münchner Med. Wochenschrift, 1913, No. 22.
3. Stoeltzner: Medizinische Klinik, 1913, No. 22.
4. Langstein: Jahreskurse f. ärztliche Fortbildung, 1913, No. 6.
5. Ostrowsky: Russki Wratsch, 1913, No. 29.
6. Wehner: Deutsche Med. Wochenschrift, 1913, No. 44.
7. Schweizer: Wratschebnaja Gaseta, 1913, No. 45.
8. Stawsky: Terapewtitscheskoje Obosrenije, 1913, No. 18.
9. Wieland: Correspondenzblatt f. Schweizer Aerzte, 1913, No. 40.
10. Bertlich: Münchner Med. Wochenschrift, 1913, No. 26.
11. Guidi: Gazz. Internaz. di Med.-Chir.-Igiene, 1913, No. 45.
12. Bertlich: Zeitschrift f. Kinderheilkunde, 1913, Bd. 3-5.
13. Curschmann: Münchner Med. Wochenschrift, 1913, No. 44.

15. Schnirer: Medizinal Index und Therapeutisches Vademecum, 1914.
16. Birk: Leitfaden der Säuglingskrankheiten, Bonn 1914.
17. Beck: Medizinische Klinik, 1914, No. 4.
18. Wegener: Münchner Med. Wochenschrift, 1914, No. 7.
19. Kamnitzer: Deutche Med. Wochenschrift, 1914, No. 17.
20. Reber: Siebenter Bericht d. Vereins f. Säuglingsfürsorge in Basel, 1913, S. 6.
21. Bauer: Gyogaszat, 1913, No. 49.
22. Vogt: Die Therapie d. prakt. Arztes, Berlin, 1914.
23. Esser: Die Therapie a. d. Bonner Univ. Klinik, Bonn, 1914.

THE IMPORTANCE OF APPLIED BIOLOGY

BY CHARLES C. MAPES
Louisville, Kentucky

As has been elsewhere stated, while the writer is disinclined to claim priority in the presentation of original suggestions in any department of scientific literature, nor is he desirous of provoking controversy from which no possible benefit could accrue, he was among the first in this country to emphasize the importance of early instruction of the young in sex hygiene and sexual morality.

The writer's first contributions to this important subject were prepared more than twenty years ago, when it was considered almost a criminal offense to speak plainly upon sexual topics, when neither medical nor secular editors could be induced to accept and publish dissertations upon the question of sexuality, fearing that the presentation of such material would seriously offend their readers. However, early in 1896 a medical editor was persuaded to depart from the beaten path in literature and accept two papers dealing with Higher Enlightenment versus the Age of Consent, and these proved so interesting that the editor himself later published an elaborate serial article along similar lines.

At that time the idea of adequately enlightening youthful humanity in the physiology and hygiene of sex had few advocates, but as then predicted by the writer a radical change has since occurred in the attitude assumed by the medical profession and also the laity. During the last few years there have been published several monographs upon the subject, incorporating without credit some of the ideas previously advanced by the writer and others, the author of one of the latest wisely dedicating the volume to his infant daughter! Public interest has now been so aroused that nearly every periodical in Christendom, both medical and secular, has been forced to open its pages for frank discussion of sexual subjects.

Certain views expressed by the writer twenty years ago seem so apropos that they may bear repetition, and are herein epitomized principally to emphasize the fact that meagre information of real value has been added by the hysterical vaporings of recent authors.

In view of the enlightenment of the Nineteenth Century, considering the superior educational facilities possessed in other directions, is it not strange that so little attention and energy are devoted to advancing and elevating the standard of morality and the knowledge of sexual physiology and hygiene among the masses, to the proper cultivation of scientific knowledge concerning our physical and physio-psychological being, to the careful education of the young of both sexes in matters relating to sexual morality and distinctiveness? What is needed primarily, however, is not so much a law governing the "age of consent" as a higher standard of morality for both sexes, and an earlier, more comprehensive knowledge of the laws of procreation, together with a better understanding of the significance of the passions and emotions more or less directly dependent upon them, as well as the consequences which follow their transgression, gratification, or perversion. Children, while still very young, should be taught the importance of certain functions, what they are and what they indicate in womanhood or in manhood in relation to the opposite sex, and not be left to discover for themselves the mysterious gifts of nature. Early education should apply alike to the male and the female, and the first lessons must not be deferred until formation in the childish mind of erroneous ideas. Neglect of adequate early training is the cause of much mischief, and the gravest responsibility rests with parents, especially mothers, whose imperative duty it is to impart to their offspring a thorough knowledge of the laws of procreation and kindred subjects "in terms unmistakably plain and scientifically exact."

One cannot believe that a fond, loving mother would dispatch an adolescent daughter upon a mission fraught with innumerable physical dangers, without first so graphically depicting those dangers as to leave an indellible impression upon the youthful mind, hoping that their avoidance might be thus secured. Granting this, does it not surpass understanding how she can conscientiously allow the same daughter to pass from childhood to womanhood, to mingle with men of the world in what is termed "society," where far graver dangers from a moral standpoint may be encountered, in utter ignorance of all physiological facts pertaining to herself as a human being, and without an adequate training in sexual morality? Instances are exceptional where a female, having arrived at the age of understanding, or, it may be said, after vita sexualis has been established, yields to the seductive wiles, entreaties or threats of a would-be seducer, if she has previously received a competent education in sexual morality, and possesses a full knowledge of the consequences which may be expected. Therefore, primarily the mother is largely responsible for the downfall of her daughter, and with this view in mind her duty is plainly apparent. When vita sexualis has been established, i.e., that period in the life of the female when evolutionary changes in the sexual apparatus make apparent the difference between male and female, she is practically as much a woman and as capable of differentiating between right and wrong when applied to sexual relations as she will ever be, provided she has received the careful training necessary to a complete understanding of her physiological being.

From time immemorial it has unfortunately been the custom for pseudo-moral and mock-modesty reasons, to strenuously avoid mention of everything pertaining to sexuality, to physiological facts relating to the laws of procreation, etc. The resulting evils are at once apparent; children of both sexes grow to adolescence in absolute ingorance of the truths of nature in relation to human genesis, of morality considered from a sexual standpoint, and of their individual procreative functions; they are, consequently, quite unprepared to wrestle with the complicated problems of later life. Their innocence based upon nothing more nor less than ignorance, becomes a most pernicious factor; yet they are taught and assured that innocence (i.e., ignorance) is praiseworthy, they are denied the knowledge and truth requisite to perfect enlightenment. As certain as "time works changes in all things," it cannot fail to revolutionize the existing trend of public and private opinion upon this subject, and the youthful mind will be educated in the truths of human genesis, sexual morality, and kindred matters.

As already indicated, the greatest responsibility for lack of proper education rests with the mother. Let her, then be impressed with the importance of truthfully enlightening her children in the natural laws governing procreative functions, instead of considering their questions foolish and, for fear of demoralizing results, giving answers evasive or absolutely false. Such results come not from truth, but from ignorance born of deception, falsehood, superstition, and absurdity. Knowledge only can promote and maintain virtue and purity in youthful humanity; yet to conserve virtue a false sense of modesty (or morality) has induced society (parents) to employ every method of subjugating truth and encouraging and perpetuating ignorance. Subterfuge, deception, and even falsehood, have been utilized in endeavors to avoid elucidation of plain, living truths.

Can a valid, tenable reason be advanced why children should not be early instructed in the truths of nature and the physiological laws which govern their existence? Certainly the only method of shielding them from physical disaster and moral contamination is by a thorough enlightenment upon these vital questions. It is a fatal error to allow them to gain such knowledge from extraneous sources, for reasons too obvious to require enumeration. Fortified with a higher and nobler understanding of physiological facts, with a more elevated and comprehensive enlightenment in sexual morality, youthful humanity of tomorrow will be proof against the temptations which today continually confront and cause them to stumble and fall. (1)

How many of our boys have the true meaning, uses, and dignity of the sexual organs delicately but clearly explained to them before the age of puberty, by their fathers; and how many of our girls, by their mothers? The first knowledge most of them obtain of this wonderful subject is from the filthy lips of some vulgar servant or prurient older schoolmate. Is it any wonder that, driven by natural curiosity and the powerful impulse of awakening sexual consciousness and ashamed to inquire of those who ought to be their natural instructors, they resort in an ignorance as pitiable as it is deplorable, to experiment upon themselves, upon one another, nay, even upon the lower animals? Truly, ignorance is the very mother of vice.

The freedom of intelligent, refined conversation upon sexual subjects ought to be broadened; it should no longer be considered indecent to speak plainly. Most of the flavor of obscenity which hangs about the discussion of sexual matters is due to this very restriction. No excuse nor danger should be left for boys and girls on the ground of ignorance of this important function. In other words, intelligence, altruism, true refinement, should be promoted by every possible means and nature will continue to assist by emphatically discouraging their opposites. (2)

Numerous instances might be cited where a higher standard of sexual morality could have been beneficially applied to members of the elite society; where some of its prominent buds have blossomed in ignorance of sexual morality, the laws of procreation, and their relation to the opposite sex; where without orange flowers they have experienced the pangs of premature parturition—commonly and for obvious reasons styled "rheumatism," "sprained ankle," "malaria," etc.— or where for similar reasons they have paid the fashionable watering place (?) a two months' visit! Is further proof required that sexual morality, or higher enlightenment, might with equal propriety be applied to those in the better walks of life, as well as among the middle and lower classes? (3)

In commenting upon the imperative necessity of higher enlightenment among the youth of both sexes, but with especial reference to the female, a writer in the Journal of the American Medical Association remarks in substance: To properly accomplish the work of education one must begin with the children; bring them to healthy manhood and womanhood, free from vices, with a thorough knowledge of the physical dangers which may later beset them. Prevent their learning evil habits by giving them instructions in every necessary line, dietetic, hygienic, etc. Teach them moderation in all things, and their duty to each other. Too much mock-modesty of parents has wrecked more lives than any pestilence which has ever visited the earth. Parents permit their children to learn important physiological facts in unsatisfactory vulgar fashion, begetting idle curiosity and its train of mistakes, and allowing them to drift from parental surveillance. They read pernicious books, appealing to the lower and baser nature, giving them distorted ideas of those functions which should be held sacred. Is it any wonder some of them go wrong? Teach mothers the duty they owe their children, in no uncertain terms, in regard to the physical as well as the mental care of their bodies, that when they reach the age which renders them amenable to physiological law they may be made acquainted with every possibility which may confront them. This can be done with tact in such language as not to offend the most fastidious ear. "With knowledge hundreds will die, but ignorance will slay its millions." The fault should not always be charged to these ignorant young women, but to the mothers who have trained them.

Under the superscription of "Poor Little Girl" there appeared in the September, 1914, issue of The Medical Council, Philadelphia, Penna., a contribution by Spilman so forcibly emphasizing the imperative demand for more comprehensive understanding of the truths of human genesis among the youth and adolescent of both sexes, and so graphically illustrating the dangers of ignorance, that at the risk of adverse criticism of being prolix, almost the entire narrative is reproduced:

It seems but a short time since she was a bright and bedimpled infant, the joy of her mother and admired by neighbors and acquaintances. Today she is just where she does not belong, under six feet of earth and merely a memory instead of a happy, useful member of society. A few short weeks ago she was a care-free, jolly girl, pretty and petted, endowed by nature with apparent charms, and like other girls entitled to the prospect of a happy future and the fulfillment of woman's mission, the establishment of her own home, the love of an honest and honorable man and the caress of little fingers in whose touch she would realize the perpetuation of her own joyous nature. Now she is dead, the victim of two human beings called men, by both of whom her confidence was abused, one to satisfy his passions, the other to obtain money! And her story is the story that has been written in the lives of many other girls, and which, pity 'tis, will be written for thousands yet to be!

In the summer there came into her life a young man not nearly so young as she, for she was but eighteen and just stepping from girlhood to womanhood. He appealed to her fancy and they became firm friends. There seemed to be no reason why she should not trust him, as everyone before in her life had been trustworthy. Neither could she differentiate between affection and passion, for sometimes the dividing line is but an invisible boundary and not easily discerned by those whose eyes have not become opened to the hardness of the world. And so it was that she tasted of the fruit of good and evil, and did not awaken from her dream until there was suddenly thrust upon her the consciousness that she had become responsible for another life. The horror of it appalled her, and in a pitiful effort to mask the situation and save those dear to her from the knowledge of her plight and from sharing her disgrace, she took counsel from the poorest of counselors, who told her "that there was a place where she could be freed from her trouble." Thus she fell into the clutches of one to whom many names could be applied, one of the human harpies who prey upon the weak and unfortunate, and there she met death without a soul who cared for her anywhere near, suffering during the last hours of her life the most terrible pain that can come to a human being. She who had been the previous day a healthy if not a happy girl went to meet her Maker on a wave of pain, paying with her life and even her name for a moment of folly!

"There are many little girls who have their problems, and we are all a bit responsible, for we do nothing to warn in advance, and when they fall we turn our backs and pass by on the other side in the "holier than thou" fashion. And they realize it and will do anything to conceal their trouble and avoid that awful ostracism." (Spilman.)

Those familiar with the ultimate results of human ignorance will understand that the foregoing narrative is neither imaginary nor overdrawn, that it merely represents a brief recital of a single unfortunate case which might be multiplied by thousands! Criminal abortionists flourish everywhere, and their clientele embraces the rich and the poor, the urbanite and the suburbanite, the adolescent and the adult, the ignorant and sometimes the educated among the genus homo femininis. It is suggestive that in the city of Chicago alone more than sixty thousand criminal abortions are said to have been procured within a single year! "It is conservatively estimated that, in this country, at least, one-half of all pregnancies are terminated by abortion, the majority being deliberately and intentionally procured, whether the prospective mother be old or young, married or single, appears of little importance." "Criminal abortion is so universally in vogue that it may well be termed a national vice." Unfortunately in many instances the ultimate outcome of abortion criminally induced is identical with that shown by Spilman's story of the "Poor Little Girl." However, where death of the female does not ensue, the fact that a criminal abortion has been procured seldom becomes definitely known.

It so happens that just at the present time Kentucky enjoys the distinction of limelight prominence by reason of two state-wide campaigns, one against illiteracy and another directed toward the eradication of a presumably contagious conjunctival disorder prevalent among school children and which the government experts have wisely or unwisely diagnosticated as trachoma*, regardless of the pertinent fact that neither follicular conjunctivitis nor illiteracy likely exist to greater extent in Kentucky now than at any other time during the last twenty or perhaps even fifty years. While campaigns of enlightenment are always commendable, if there could be added other and broader educational features, including applied biology which is intended to represent the literal story of life, greater benefits to humanity would accrue.

Because of the objections raised to the teaching of sex hygiene in the public schools, the project has been practically abandoned. However, through the so-called nature studies the kindergartens have accomplished excellent work in this educational direction. It is but a short step from the contemplation of plant to animal life, and kindergarten training furnishes an excellent foundation for the study of comparative anatomy and physiology, which includes reproduction in both plants and animals.

If the scope of the Kentucky campaign against illiteracy could be extended to include even kindergarten studies in physiology, sex hygiene and sexual morality, "poor little girl" stories would be less frequently repeated.

---

*Although the name trachoma appears to have been adopted as correct by the United States Government, literally it merely indicates something which may be rough and has no reference whatsoever to the eye or the conjunctiva. Technically the contagious conjunctival malady which the term trachoma is intended to represent should be designated as specific granular epipephycitis.

LITERATURE

(1) Mapes: Medical Age, February 25, 1896, pp. 105-108.
(2) Mapes: Quoted from Hutchinson, Medical Age, Aug. 10, 1896, pp. 462-465.
(3) Mapes: Medical Age Aug. 10, 1896, pp. 462-465.

RECURRENT BRONCHITIS IN CHILDREN*

BY CHARLES GILMORE KERLEY, M.D.
New York

By recurrent bronchitis we are to be understood as including those cases of illness in which there are attacks of bronchitis with severe cough, often with bronchial spasm. A small proportion of the cases suffer from true asthma. Fever, while sometimes present, is not necessarily a part of the disorder. The child is brought with the story that there are frequent colds and cough and bronchitis. The bronchitis is usually of an asthmatic type, that one attack is barely recovered from before another supervenes, sufficient in many cases to entail chronic invalidism, preventing, or seriously interfering with attendance at school. The repeated illnesses entail a housing and loss of appetite, which, in the process of time, may result in defective growth and development. Usually but not invariably the child is free from trouble during the summer, but with the advent of autumn the so-called colds begin. These cases are to be differentiated from the usual infectious colds, bronchitis and influenza that in these disorders there is fever, prostration and loss of appetite. Of course there may be at times an associated infection, but in the vast majority of the attacks in a given case such symptoms are not present.

As time passed and as a great many cases of this type were encountered, it was impressed upon me that there must be some common ground, some similar constitutional state that rendered these children subject to the attacks, that rendered them unable to stand the usual exposure which failed to affect other children. Through comparison of the cases and investigation of the family histories, it appeared to me that I could set apart these children, that they could be grouped in a class having several features in common. It was found that a considerable proportion of the patients had been difficult feeders in infancy, that bottle feeding had been unusually troublesome.

It was also found that not a few were subject to or had had eczema. It was found that recurrent vomiting and so-called bilious attacks were not uncommon, and that many of the patients were the offspring of those who had suffered from disorders of metabolism, such as gout, rheumatism, periodic headache, so-called bilious attacks and chronic eczema.

---

*Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.—N. Y. State Medical Journal.

They were very apt to have a habitually coated tongue and rarely possessed a vigorous appetite. There are here no constant gastro-enteric symptoms. There was here no constant urinary changes. By observation and acquaintance with the peculiarities of a great many cases, it was demonstrated that these children bore cow's milk fat badly. In not a few cases it was given in but small amounts or did not agree. It was also found that these children bore sugar badly, attacks being precipitated by free indulgences. The influence of butter, fat, and sugar was also shown by the gratifying relief of the patient when these substances were largely removed from the diet. There appeared to be a faulty oxidation, the child showed but a limited capacity for the oxidation of these high carbon foods; their complete conversion into energy C.O.2 and metabolic water was not possible, intermediary, at present indeterminate toxic products were the outcome which become manifest in different ways, and one of these ways appeared to be a lessening of resistance or of an establishment of an unusual irritability upon the respiratory tract.

These cases are similar to other periodic illnesses, such as recurrent vomiting, recurrent periodic fever with acetonuria, recurrent eczema, in that the attacks are more apt to occur during the colder months, when the elimination by the skin is less active and when muscular exertion is more in abeyance.

Among 141 cases of recurrent vomiting forty-one per cent suffered from recurrent colds.

The so-called catching of cold because cold and inclement weather is much less a factor in these than has been supposed because when the patients are fed and managed right, the weather has but little influence, just about as much as it has in a periodic fever, with acetonuria. Again, not a few of these cases will have the periodic colds during the summer as in Case II.

In short we have demonstrated clinically that these cases of recurrent coughs with bronchitis, usually with spasm, are the result of a systemic intoxication, due to the use of certain food substances which the organism is incapable of properly accommodating. As an associated factor, defective skin elimination and absence of adequate muscle exercise are contributory causes.

I have had to treat a great many of these cases during the past few years, and, while I have met with flat failures, in the vast majority of cases, probably ninety-five per cent, the results have been most gratifying.

Management.—Believing that our trouble basically is largely a matter of food intoxication, of a definite type, the source of the intoxication is removed. The average child after the sixth year receives two or three times as much energy food as he requires.

Milk and sugar are not indispensable for any child after the fifteenth month. I have brought up several children without cow's milk, and they differ in no way in their development from other children.

Cane sugar was not cultivated until three hundred years ago and as late as the sixteenth century it was used largely as a condiment, as honey is used at the present time. Countless millions existed and lived their span of life without it. Now we require forty pounds a year per capita. It requires no great strain upon the imagination to believe that the introduction of so large an amount of a highly energized food in excess of demands might produce ailments of a very definite character.

In an elaborate treatise on sugar, published in 1800, Benjamin Moseley quotes a statement of Theophratus, who lived 321 B. C., explaining that "the generation of honey is not only from flowers, but also from canes or reeds." Mosely thereupon cites the writings of numerous celebrities (including Nearchus, Alexander's admiral, Varro, Dionysius Afer, Strabo, Seneca Lucan and Pliny, and covering a period of our era) to show that the sweet juice of the cane was appreciated as a beverage and flavoring agent in Egypt and India, long before the actual manufacture of sugar was evolved. From the East sugar in some form was early brought to Europe, and before the discovery of America, cane sugar was made on a considerable scale in the islands of the Mediterranean. From Spain and the Canaries in turn, cultivation and manufacture from the cane were later extended to the West Indies and Brazil.

It is noteworthy that as the refined product came into use, it was first employed only in medicine "to render unpleasant and nauseating drugs grateful to the sick." Gradually sugar was found of value in preserving fruits, and then added to tea, wine and various beverages, until its acceptability as food for the sick and its value as a source of energy in sustaining artificially fed infants came to be appreciated. Then only (about 1600) was the substance commonly recognized as a food.

What the end result has been cannot be better summarized than in the words of Moseley, written in 1800: "Two centuries have elapsed since it can be properly said that sugar has become an ingredient in the popular diet of Europe. Such is the influence of sugar that, once touching the nerves of taste, no person was ever known to have the power of relinquishing desire for it."

The recurrent bronchitic patients are cut off from sugar largely—entirely, if the case promises to be difficult. Cow's milk is omitted entirely if the case is obstinate, but skimmed milk is allowed. Time and again I have seen children, from three to six years of age, gain from three to six pounds after removing sugar from the diet and giving milk skimmed or none at all. An apparent handicap was removed, they would take more of other food and assimilate it. The carbohydrates and fats found in vegetables, cereals, bread stuffs and meats supply all the heat and energy required.

Clothing.—I usually advise that medium weight underclothing or linen mesh be used. The child is given a warm bath at bed time, followed by a vigorous rubbing and sometimes massage.

Inasmuch as the so-called lithaemic type is the individual most frequently affected, I give such children interval treatment with bi-carbonate of soda alone or with the salicylate of soda.

Bowel Function.—If habitual constipation is present a free daily evacuation of the bowels is insured by suitable treatment.

I will now present a few private cases, whose mothers have kindly consented to come here.

Case 1.—This girl, six years of age, is a resident of Bay Ridge, Brooklyn. She came to me in October, 1912, because of attacks of bronchial asthma. The child had always been subject to frequent colds, and during the year previous to coming under observation there had been frequent and severe attacks of bronchitis with asthma. In fact, there was almost constant bronchitis with exacerbation, so that there was very little time free from bronchitis, which was almost as troublesome during the summer as in the colder months. At the time of the examination there was impeded breathing, due to bronchial spasm. The appetite was poor. The child was fairly well nourished. The diet was that of the average child of six.

She was habitually tired and decidedly irritable. She was given a diet largely sugar-free and one pint of skimmed milk daily. Otherwise the food was that of an average child of six. The medication consisted of Liq. Potassi ars. gtt i ss. and bicarbonate of soda gr. viii, three times a day for one month, and then this dosage was given on the alternate five days until July, 1913, when the medication was given five days with ten-day intervals of rest. In August, 1913, the first attack under treatment occurred. There was a sharp attack of asthma with hard cough but without fever. The day before the seizure she had been on a long sail with unusual fatigue. She was then given ten grains of bicarbonate of soda three times a day for ten days in alternation with the arsenic and bicarbonate of soda. In October, 1913, there was a slight attack, keeping the child in the house for two days. Salicylate of soda, gr. iii to the dose, was then added to the arsenic and bicarbonate of soda mixture and given for ten days with a five-day rest period. In February, 1914, there was a cold with cough and some wheezing for three days. The mother volunteered the information that the colds came on when the medication was discontinued. The child developed a cough in April, not enough to confine her to the house. The child has passed through the present winter, 1913-1914, with but three days indoors, and from 1912 to 1913 with eight days indoors. This in comparison with her former record of persistent bronchitis with acute exacerbation makes the result a most satisfactory one.

Case 2.—This girl, six and one-half years of age, came to me in October, 1913. She is a resident of Westchester County. She was fairly well nourished. Examination showed moderate bronchitis. The child came because for the past six months she had attacks of bronchitis with asthma about every ten days, the longest period free from attack being one month.

She was irritable and hard to manage. During the ten days preceding her visit to me, there had been three sharp attacks and remissions. She was given a sugar-free diet and skimmed milk, one pint daily, was allowed. Saccharin was used for sweetening purposes. Medication was as follows: soda bicarbonate, gr. viii, soda salicylate, gr. iii, three times a day. In November there was one attack of asthma lasting four days. In December she had one attack lasting one hour. In January, one attack lasting one hour. Medication reduced to three times daily at alternate five days.

Attacks up to Date.—None since January, except one slight head cold. The gain in weight durmg this time has been five pounds. The mother tells me that she has not had the usual colds of other children in the family.

Case 3.—This boy was five years of age when I saw him. He has suffered from practically a continuous cold for the past two winters. He was seen first on May 31, 1913, with the story that since November, 1912, there had been practically continuous bronchitis. Both tonsils were enlarged, and a moderate adenoid growth was present. He was given a reduced sugar and reduced fat diet and ten grains of bicarbonate of soda three times a day. He was seen again in October. The bicarbonate of soda had been given rather irregularly during the summer. The boy's condition improved. He gained 2 1-4 pounds in weight. In November, 1913, there were two slight head colds, each lasting one day. During the entire six months that have intervened, the boy has been well, without the employment of medication, but the mother has adhered very closely to the diet, giving skimmed milk, eight to sixteen ounces daily and no sugar. The tonsils and adenoids were not removed.

Case 4.—This boy consulted me in January, 1912, when —— years old, because of continuous colds and coughs and attacks of bronchial asthma. This condition had existed for three years. The respiratory explosions were varied occasionally with attacks of recurrent vomiting and periodic fever. In February adenoids and tonsils were removed with the hops of alleviating some of the symptoms. Some improvement followed the operation, but in November I again saw him, and the story was that of the former trouble returning worse than before. The seizures were represented in repeated asthmatic seizures, and a most severe persistent cough was most distressing. The diet and treatment suggested had not been carried out. I explained to the parents that I was much interested and would treat the child gratuitously if they would follow directions absolutely. At the time the boy weighed fifty-five pounds. Red blood cells were 4,300,000 and hemoglobin sixty per cent. He was given reduced fat and sugar diet, skimmed milk and a very scanty amount of sugar was allowed. He was given three grains of salicylate of soda and eight grains of bicarbonate of soda three times a day with five days interval of rest. For tonic purposes he was given one-half grain Park, Davis & Co.'s thyroid extract twice a day. On April 3rd he weighed sixty-one pounds, having gained 6 1-2 pounds in 4 1-2 months on the reduced diet. He has not been ill in bed all winter and has missed not one day in school. In fact the entire habit of life of the child has been revolutionized.

Case 5.—A girl, aged eight years, was brought to me by Dr. Bernstein on January 21, 1914, (she is unable to be here because of an accident). For the past five years there had been almost a continuous cough, often attacks of bronchitis, one attack followed very soon by another. For three years she "coughed almost incessantly at night." The child's general condition was fair. The chest examination showed bronchitis of the asthmatic type, delayed inspiration, prolonged expiration and many mucous and sibilant rales, a very familiar picture. The child had eczema and urticaria repeatedly and showed scratch marks involving most of the trunk. There has been repeated periodic vomiting seizures with high fever; as high as 105 degrees F. The breath is unusually offensive, tongue habitually coated.

Treatment.—Absolute sugar-free diet, saccharine used instead. Skimmed milk only. Given liquid potassi ars., gtt. 1 1-2; soda salicylate, gr. iv; soda bicarbonate, gr. viii, three times a day continuously. Pine needle oil vapor used at night.

On February 4th, the history states, that the cough ceased gradually after beginning treatment. No bronchitis or fever. There has been one attack of hives. Medication reduced to two doses a day.

Child not seen until April 25th. History as follows: No cough until the past week. Now coughing a little at night. Mother thinks she caught a cold. No medication the past two weeks. Out of doors every day. Previously was kept in a greater part of the time because of the continuous performance of colds. Gained three-fourths of a pound in weight. Tonsils and adenoids were removed two years before without improvement in colds. Mother states that child is better than ever before in her life.

Case 6.—This girl, age 7½ years, I saw at her home on January 30, 1914. I found her in bed where she had been a greater part of the time since November 1, 1913. She was indoors from November 1st to Christmas, but for two weeks. Then she had another cold and had been in bed until my visit. She was well nourished but pale. The colds and bronchitis had been very troublesome for 3½ years.

There was but little bronchitis at the time of my visit, but there was a severe cough. The only other complaint was indefinite muscle pains.

The child had been getting whole milk, ice cream and sugar freely. These were all discontinued, and she was given skimmed milk, and saccharine instead of sugar. The cough ceased promptly and the rheumatic pains subsided. For the three months, February, March and April, the girl has been perfectly well and out of doors every day. She has gained 1½ pounds in weight. There has been n aeight per cent increase in the hemoglobin and 500,000 in the red cells. The diet has been rigidly adhered to.

The medication consisted of three grains of salicylate of soda in eight grains of bicarbonate of soda, both of which were discontinued after one month.

Case 8.—This girl, 8½ years of age, was brought because of repeated colds, of not a very severe type, but seriously interfering with school duties. These have entirely ceased. There has been no sign of trouble since January when the treatment was instituted and no loss of time at school. She was given the salicylate and bicarbonate treatment with a scant sugar and non-milk diet. In three months under treatment she has gained three pounds in weight on the so-called starvation diet.

A noticeable feature of these cases is the improvement in weight, blood and the general physical and mental condition of the patient. The child feels bodily well, a handicap has been removed and he is well and naturally happy. In about fifty per cent of this type of patient the adenoids and tonsils had been previously removed.

INTUSSUSCEPTION*

BY JOHN B. RICHARDSON, JR., M.D.

Louisville, Ky.

The fact that intussusception is the cause of thirty per cent of all intestinal obstructions, and that in children under the age of ten years it is responsible for fifty-three per cent. is my principal reason for presenting the subject for your consideration.

The various forms of invagination, in the order of their frequency, are as follows: Ileo-cecal, forty-four per cent; enteric, thirty per cent; colic, eighteen per cent; and ileo-colic, eight per cent. About fifty per cent are acute, thirty-four per cent sub-acute, and eighteen per cent chronic.

Obstinate coprostasis, acute indigestion, the presence of neoplasms, polypi, etc., may be causative factors in the production of intussusception; the two former by their tendency to produce intestinal paralysis, the two latter by the efforts of the musculature of thé intestinal wall to expel them. Trauma may also excite intussusception, numerous cases having been recorded following injury.

Age and sex are important factors, invagination being found most frequently during the first year of life, chiefly between the fourth and sixth month, and seventy-five per cent in males. Increased length of the mesentery is given as a cause, but this may be a result discovered at operation or necropsy rather than a causative agent. Typhoid fever is a more frequent cause than hitherto believed. As in tuberculous intestinal lesions, ulceration is oftentimes the exciting pathology.

The disproportion in size of the lumen of the colon and the ileum is said to explain the greater frequency of the ileo-cecal variety. That the colon at birth is only slightly larger than the ileum and thereafter rapidly increases in size, may account for the large number of cases of intussusception occurring in this locality during early infancy, but does not explain the frequency in later life. Cubbins (Surgery, Gynecology and Obstetrics) contends that the increased length of the mesentery, together with the fact that the ileum and cecum are at more or less right angles to each other, explains the frequent occurrence of this variety at all ages, and advises stitching the ileum to the cecum in such manner as to obviate this relationship. The appendix and Meckel's diverticulum may be causative agents, and either may be partially or completely invaginated.

---

* Read before the Society of Physicians and Surgeons, of Louisville, Ky.

Various other presumed etiological factors have been suggested but will not be specifically considered as they really belong to one of the classes already mentioned. In many cases it seems likely that a combination of causes, rather than any particular one, may be responsible for the production of intussusception.

The symptoms are in most respects those observed in intestinal obstruction due to other causes. In children the course is more rapid and severe than in adults. There is oftentimes a history of injury followed by intense abdominal pain, vomiting and defecation. Distension may or may not be present. In the cases coming under my observation the latter symptom has been pronounced. The passage of gas and defecation may be repeated, depending upon the degree of obstruction. Where occlusion is incomplete, gas may be passed at intervals for some time. Venous congestion may cause rupture of minute vessels in the intestinal mucosa, and result in bloody stools; which, in conjunction with the presence of a sausage-shaped tumor, furnishes the strongest point in differential diagnosis. Rectal examination may reveal the presence of a tumor if the intussusception is low in the intestinal tract or if the invagination is of unusual length. In none of the cases I have seen has this been noted.

Two cases of intussusception have come under my personal observation, and I have been associated in three others. In one of my cases, and in two of the others, distension was marked. Peristalsis was evident through the abdominal wall and could be produced at any time by slight palpation, which was the most impressive symptom in these three cases. Any inflammatory lesion can be eliminated where this symptom can be demonstrated present, but of course any other strictly mechanical cause might produce such a result.

Treatment by the introduction of air or water is mentioned only to be condemned. Intussusception is a surgical lesion and should be so considered from the beginning, although it may be true that some patients recover without resort to surgical intervention. Cases are reported where as much as three feet of the intestine, separated as a result of the inflammatory process, have been extruded from the rectum with recovery of the patient. However, to depend upon such an outcome would be taking a long chance. The death-rate is large under early surgical intervention, but much lower than by other means. Conditions here are much the same as in obstructed herniae, and certainly none of us would be justified in advising against surgery in the latter class of cases.

Rapid surgical work is necessary as patients with intussusception are in collapse no matter how early they may be seen. A median incision is advised, and it should be sufficiently long to give access to every location where obstruction might exist. Incision over the tumor may cause difficulty, when more than one lesion exists, which oftentimes happens. Reduction of the invagination should be accomplished in the easiest possible way. If adhesions are too firm to be easily separated, resection of the intussusceptum after the method of Maunsel or Barker should be performed. The production of an artificial anus entails a large death rate, and leaves the original pathology unchanged. In the cases I have seen, the procedure which produced the most rapid reduction of the obstruction and closure of the abdomen, was the method of choice. Those operative refinements which look to the prevention of recurrences had better be left untried, unless the patient is in much better physical condition than mine have been. As the condition of the patient is usually desperate, only life saving methods should be undertaken.

Case 1.—X., female, aged fourteen months, admitted to the ward during my service at the Louisville Public Hospital in 1911. The child was breast fed, and the previous history was negative, save that defecation had not occurred for twenty-four hours. The child was cyanotic and profoundly shocked, the pulse being too rapid to be counted. The abdomen was markedly distended; liver dulness present; mass palpable in lower right abdominal quadrant. I refused to operate Death occurred within two hours. Necropsy not permitted by the parents.

Case 2.—T. R. P., male, colored, school boy, aged twelve, admitted to my service at the Louisville Public Hospital June 17, 1914. When seen half an hour after admission, the temperature was 98.4 degrees F., pulse 122, respirations 24. Family and previous personal history (obtained after the operation) negative, excepting that there had been no indigestion nor constipation. No history of injury, nor had any operation been previously performed.

Status praesens: Pain general over entire abdomen during preceeding forty-eight hours. Patient had not defecated during illness, but had done so the day before. Could not determine whether any gas had been passed. Drawn and pinched facial expression; considerable emaciation, but physical condition fairly good. Patient complained of intense abdominal pain, worse at times, corresponding with peristalsis which could be plainly noted through the thin abdominal wall. Peristalsis could be produced at any time by slight palpation over any part of the abdomen. Umbilical hernia size of walnut present, but as the ring was free this was dismissed as having no bearing upon present trouble. Enema produced no feces, but some mucus slightly streaked with blood. Upon this fact and the peristalsis, the diagnosis of intussusception was made, despite the fact that the child had been admitted to the hospital with the diagnosis of appendicitis. No blood count nor blood pressure taken.

Celiotomy by seven inch median incision. Cavity contained quantity of free fluid and lymph flakes. Entire small intestine so far as exposed congested and distended. Ileo-cecal insussusception found. Ileum invaginated through ileo-cecal valve distance of one inch; cecum flat. By introducing finger making pressure upon apex of invaginated portion, together with slight traction upon ileum, reduction was quickly accomplished. Slight tear of peritoneal coat of ileum repaired with catgut, and small drain of gauze inserted to this point. Through-and-through silkworm gut used for closure. Drain removed on the fifth day. Superficial infection about drainage site noted on the tenth day. Hot compresses caused subsidence of this complication. Patient discharged well July 17, 1914.

Discussion.

Dr. C. B. Spaulding: While my experience in the treatment of intussusception has been limited, I am greatly interested in the subject. In his book on surgery recently published, Oehsner makes the statement that he has never seen a case of intussusception in a patient over twelve years old. He says the majority of cases occur between one and four years, few as late as ten, and none over twelve. Considering the wealth of clinical material at his disposal, and the tremendous number of surgical cases that must come under his observation, the fact that he has never encountered a case of insussusception in an adult is surprising.

Personally, I have seen two cases. The first was in an adult negro, the intussusception being discovered during operation for gunshot wound of the abdomen. There were several intestinal perforations, and an intussusception six inches in length was found in the ileum, probably due to the trauma and increased peristalsis. The patient recovered without an untoward symptom, and had no recurrence of the intussusception.

I think in practically all cases intussusception is primarily due to traumatic, mechanical, or pathological interference with the intestinal lumen. It may result from intestinal infection, from appendicitis, from neoplasms, from enlarged intestinal glands, etc. In young children the irritation from acute intestinal disorders is probably the most frequent cause.

In the second case a peculiar condition was encountered during the dissection of the body of an aged negro in the surgical department of the University of Louisville. There was first an invagination of six inches of the ileum through the ileo-cecal valve, the cecum, appendix and ileum being drawn into the ascending colon. The specimen is exhibited for your inspection. The intussusception in this case had evidently existed for many years, it may be from infancy, and the intestine had functionated in the abnormal position. There were absolutely no adhesions between the intestine and any other viscus, the ascending colon containing the invaginated structures mentioned being perfectly free. I have been unable to find a similar case recorded in the literature.

As regards treatment, I believe one should simply use good surgical sense. The intussusception should be reduced if possible, otherwise the intestine should be resected just as would be done for any other form of obstruction. The question of recurrence should not be considered, the surgeon is called upon to save life in these cases rather than to prevent future recurrence of the intussusception which is probably very rare. At best opening the child's abdomen is not a simple affair, and one should do just as little as possible consistent with good surgery.

Dr. A. L. Parsons: While I have never had a case of intussusception in my own practice, I assisted in operating upon a child three years old in which the ileo-cecal valve was found at the splenic flexure of the colon. The invagination was reduced, but the child died twelve hours later. The patient was in a desperate condition and a very unfavorable operative risk at the time.

In the February, 1915, issue of the Annals of Surgery, Deaver and Ross report two hundred and sixty-seven cases of intestinal obstruction from various causes, only two being due to intussusception. As stated by Dr. Richardson, intussusception does not always produce complete obstruction. In his article Deaver did not state whether obstruction in the two cases due to intussusception was partial or complete.

The second patient mentioned by Dr. Richardson was later re-admitted to the hospital for treatment of the umbilical hernia. There had been no recurrence of the intussusception nor was there any other evidence of previous illness.

Dr. A. R. Bizot: I agree with Dr. Richardson that surgery is the proper procedure in all cases of intussusception. The afebrile condition of these patients is difficult of understanding. I have seen one case of intussusception, and in another the diagnosis was uncertain. There are evidences of extreme shock, with intense physical agony, retching and vomiting, and rapid pulse, but no elevation of the temperature in these cases.

I disagree with Dr. Richardson that the injection of water should be condemned without qualification. In the case mentioned, which I am satisfied was intussusception because the child had all the characteristic symptoms including the passage of blood by the bowel, I advised immediate operation which the family refused. With a fountain syringe I literally filled the child with water. There was a small amount of blood in the return flow, but no feces. The patient rapidly became worse, and an hour later I again practiced the water treatment. The fountain syringe suddenly emptied itself, and as the water did not immediately return, I thought rupture of the intestine had occurred. A few minutes later the water returned mixed with feces, and the child promptly recovered.

About six months later this child had a similar attack and the family said: "Doctor, you did so well the last time without operating, that we want you to try the same treatment again." I was not so successful upon this occasion, however, and the child died within a few hours. I was forced to employ the water treatment in this case, as the family refused to consider operative measures.

While I agree in the main with what the essayist has said in regard to surgery for the relief of intussusception, there are cases in which other methods must be employed. Where operation is refused, I believe we are justified in using any other measure which seems to be applicable and promises any hope of benefit. For instance, in the case mentioned by Dr. Spaulding, and he has shown us one of the most interesting specimens I have ever seen, if water could have been introduced to the cecum, it is possible the invagination might have been reduced.

Why intussusception occurs we do not know, and why children are more susceptible than adults is also something about which we know little more than we did years ago.

Dr. D. Y. Keith: I desire to emphasize the importance of radiography in every case of intussusception. It has been proven within the last year that the diagnosis of acute obstruction of the small intestine can be made with a fair degree of certainty by the X-ray, and we are able to accurately locate the portion of the intestine in which obstruction has occurred. It requires only a few minutes, and on the way to the operating room the patient can be taken to the X-ray laboratory, and from the plate the operator be able to determine the point of obstruction before completion of the anesthesia. It is a wise procedure to have an X-ray picture taken in every case of intestinal obstruction from any cause.

Dr. J. B. Richardson, Jr. (closing): All the cases of intussusception that I have seen were in children. One point which impressed me in the five cases mentioned was the marked peristalsis which could be noted through the abdominal wall. The fact that peristalsis could be induced by slight palpation over the abdomen was another interesting feature. I have not seen this mentioned in any text book. This fact and the presence of blood in the stool constituted the principal diagnostic factors in the cases that have come under my observation.

In the first case reported, when I declined to operate, the hospital interne was greatly disappointed and transferred the patient to the homoeopathic service, telling the surgeon there that I had refused to operate. The homoeopathic surgeon also declined. It is gratifying to know that my judgment was sustained by the homoeopathic surgeon!

Dr Bizot's views are evidently in strict accord with mine as to the treatment of intussusception. The water treatment was forced upon him by circumstances. I am sure he would have operated had the family not refused to permit the application of surgery. In a case such as Dr. Spalding has mentioned it seems certain that nothing short of surgery could have reduced the invagination.

The X-ray should be of valuable assistance in arriving at a correct diagnosis. It is perfectly amazing, considering the short time these patients are ill, the profound shock that is present. In the first case reported the child had a normal temperature with pulse of 122.

As to the question of selecting the anesthetic in these cases; it seems to me that gas and oxygen should be given preference.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Why Should the New-Born be Subject to Icterus?—Von Reuss summarizes the etiological factors, all of which are more or less concerned in the disposition of the newly-born to icterus, as follows:

1. Mechanical factors, such as narrowing of the biliary ducts and increased viscosity of the bile.
2. The plethora, of the new-born organism in coloring matter, hematin and bilirubin.
3. The functional insufficiency of the liver cells, from congenital, toxic or infectious causes.

The practitioner should remember that it is impossible in a given case to ascertain which one of these factors is the most important. The icterus clears up after a few days, certainly after two or three weeks, and alone should not be an indication for internal medication. To me the administration of calomel seems contraindicated, since it may do harm, and what is known of the physiologic action of mercury, can do no good.

Another point in this connection: Operative procedures during the icteric period should not be performed. There is a great tendency to uncontrollable hemorrhage, deficient reparative processes and even sloughing. Circumcisions, cutting the frenum of the tongue, and other minor operations, should not be performed when the infant is jaundiced, or about to become jaundiced.

Jaundice without concomitant symptoms may be assumed to be benign. If, however, additional symptoms are manifested, such as extreme restlessness, complete anorexia, febrile movment, cyanosis, stupor, convulsions, even the jaundice must receive most careful consideration. Contrary to the common belief, obliteration of the bile passages is not a condition immediately fatal. In these cases, even the meconium is light gray in color and soon after the infant nurses, the stools become as white as milk and remain so. The urine soon shows the brown color characteristic of bilirubinuria. As a rule, these infants live for weeks, or even months, when properly cared for. Such a case came under my care a few years ago.—John Zahorsky, M.D., St. Louis, in Missouri State Med. Jour.

Fracture of the Elbow in Childhood.—William Francis Campbell, Brooklyn. The Medical Times, February, 1915. Amer. Jour. of Surg.

In the fracture of a long bone a slight discrepancy of the fragments is compatible with perfect functional result. But in fracture of the elbow even slight abnormal prominence in the interior of the joint will be an obstacle to normal joint movements, and may be the cause of permanent disability.

It is obvious that reduction here is something more than the reposition of fragments; it implies a coaptation so accurate and a retention so complete that the resulting joint surfaces will permit of normal joint movements.

If the fragments be accurately reduced and held in this position the question of duration of immobilization and the special position in which the limb should be placed are secondary considerations.

The fundamental fact must be appreciated that it is not the duration of the immobilization that produces ankylosis, it is the faulty reduction causing periosteal proliferation that locks the joint; and further, no special position of the arm will obviate the disastrous results of an incomplete reduction. The general rule to be followed in all cases of fractured elbow is—accurate reduction maintained by that splint and that position of the arm which is best suited to the special indications of the individual case.

Each fracture is a special problem, with its individual needs and its peculiar indications; and while no precise rules can be formulated, certain precepts may be followed which will be a safe guide in all cases.

Find out exactly just what is fractured and be satisfied with nothing but anatomical accuracy.

A clinical examination under anesthesia is the first requisite; but it is never sufficient: it must be supplemented by an x-ray examination. Two radiographs should be made, one profile, and one surface view. The x-ray picture without proper interpretation is futile.

Reduce the fracture by such maneuvers as are efficient in accurately coapting the fragments (flexion, extension, traction, direct pressure, etc.). Care should be taken to avoid any rough manipulations.

Immobilize permanently only when assured that reduction has been obtained, and that the position of the arm and the splint selected are adequate to maintain reduction.

This will be evidenced by (a) normal conformation of the parts; (b) a normal range of flexion and extension. But best of all is confirmation furnished by a second radiograph.

Foreign Bodies in the Larynx in Children, by L. Vallespinosa y Vallve (Med. Rec.)—The common foreign bodies found in the larynx in children are beans, fruit stones and pebbles. The first symptom is convulsive spasmodic cough with a peculiar metallic guttural voice. Ordinarily the foreign body lodges in the vocal cords. Inspection of the larynx is only of service in diagnosis when done with the laryngoscope. Complications are ulceration of the tissues, bronchopneumonia, and pulmonary emphysema. The treatment consists in the administration of emetics and the tickling of the pharynx to produce vomiting. If emesis does not expel the foreign body recourse must be had either to intralaryngeal operation or to tracheotomy. Tracheotomy in such cases should never be done by the intercricothyroid route because it does not afford enough light for the extraction. It is better done below the cricoid, including in the incision the upper rings of the trachea.

Goiter in Children.—C. G. Buford (Surg. Gyn. and Obst., 1915, xx, 35) says that simple goiter is of frequent occurrence among children in Chicago and is associated with a definite symptom-complex. This symptom-complex indicates a low grade of health varying in each child. Goiter usually occurs in certain geographic districts and appears most frequently when certain waters are used for drinking. These often contain sewage. Drinking water is probably the chief cause of goiter. The water content causing goiter is probably bacteria or their chemical products. Focal infections, particularly those of the tonsils, adenoids, and teeth of children, may supply the excess of bacteria ingested and produce goiter singly or in conjunction with the water supply. If these theories are correct, the thyroid gland, which enlarges under these conditions, is an agent in the destruction of bacteria, as the blood passes through it in such great abundance, or it provides a product to destroy these or their toxins in the blood. When the work of the gland is excessive it enlarges through hypertrophy; when compensation is incomplete or the dose continuously large or toxic, constitutional damage follows. Because of the location in which hypertrophy usually begins, differentiation in function of the various areas of the thyroid gland is suggested. Because invasions of the thyroid gland beyond the primarily enlarged nodule usually occur in the lobules immediately surrounding it and this zonal plan of extension often continues but only in toxic cases overlapping function of the lobules is suggested. The primary nodulation is a hypertrophy of compensatory character; if the cause is not removed the original lobe to take on enlargement continues to increase in size and results in cell damage; the process may extend to other lobules; the involved cells either become useless or the secretion of the lobule becomes toxic and there is spontaneous encapsulation; probably the capsule is firm and thick in proportion to the damage to its contents or the toxicity of its secretion. These lobules in the lower pole of the right lobe, rarely in the left, are the common seat of benign adenomata of adults. Because we do not often see this type of goiter in adolescents there must be usually a spontaneous recovery during childhood. Many cases of this type of goiter improve locally and some disappear on the giving of thyroid or the removal of focal infections, or both, while in all there are marked constitutional improvements.—Amer. Jour. Obs. Dis. Women and Children.

Diagnosis of Tuberculosis in Children.—Ranke (Munch Med. Woch., 1914, No. 42-43), considers the diagnosis of tuberculosis in childhood by means of inspection, palpation, percussion, and auscultation. He does not question the value of tuberculin reactions, Roentgen ray examination and laboratory investigation, but believes that a diagnosis can usually be made by the older methods.

Tuberculosis of lymph-nodes is considered in detail. When a superficial gland is involved a very typical picture is presented. At first there is swelling, then breaking down, or more typically, an irregular shrinkage and the formation of adhesions. The resulting adherent irregular lymph-node is characteristic of tuberculosis.

Infection of the lymph-nodes about the root of the lung is accompanied by a mass of inflammatory tissue, which gives rise to definite signs and symptoms. By careful percussion of the back, differences of resonance and pitch, especially pitch, can be made out. Ranke believes that more exact results can be obtained by starting at the bottom and working up. Only in extreme cases is there any change anteriorily. Considerable degrees of swelling may cause narrowing of bronchi, with consequent diminution of breathing over various areas, usually one or both upper lobes. Pressure may also cause inflammation of the larger bronchi, called by Ranke "hilus catarrh." This is characterized by severe, more or less intermittent cough (easily confused with pertussis or asthma) and by auscultatory changes.

Theoretically, tuberculosis of the tracheo-bronchial nodes depends on one or more foci in the lung itself. Usually these foci cannot be located by ordinary clinical examination and Ranke does not believe too much importance should be attached to their theoretical presence.

Pulmonary infection in the child is marked as a rule by extensive perifocal inflammation. Even small lesions may be surrounded by so much inflammatory tissue that a whole lobe seems involved. Sudden and striking changes are frequent.

Ranke emphasizes the necessity of making a clear distinction between the diagnosis of the presence of tubercular tissue and the diagnosis of active tuberculosis. While advising vigorous and persistent sanatorium treatment of active pulmonary infections, he believes that many children, with demonstrable tracheo-bronchial gland enlargement, should be allowed to lead active, normal, outdoor lives.—St. Paul Med. Jour.

Problems of Childhood.—Among the more troublesome questions that are not infrequently propounded to the family physician are those of anxious parents worried because of abnormal tendencies in growing children. "What shall I do with my boy?" He is growing dishonest, or untruthful or it may be immoral. At first glance it would seem that these are not questions which should properly be propounded to a physician, for they could hardly be considered as having to do with the health of the child, and yet they are asked and the physician has usually to confess himself unqualified to help. In certain neurotic conditions surgery has been resorted to, as in those cases where circumcision has been undertaken to relieve habit spasm and allied states, but often without due consideration. Many students of childhood are coming to the conviction that there is a physical basis for many cases of moral squint, as is well illustrated by the case of a boy of eleven, an exceptionally attractive, bright and promising child in whom two traits developed with alarming rapidity and proved uncontrollable by the ordinary means of discipline—lying and theft. The methods of phychanalysis usually employed in the study of adults failed to discover a cause in this boy who moreover seemed to be well up to the average in his physical makeup. Repeated attempts at correction proved futile, his thieving became more and more bold and crafty and he developed a constant mendacity that finally determined an unusual step. After repeated observation by an able, experienced physician in a neighboring city, who was peculiarly well skilled in psychology, it was determined to withdraw the boy from school and from his home and place him among strangers where he was compelled to earn his living out of doors at the age of twelve, as it was believed that his physical had fallen behind his mental development and that an abnormal appetite, especially for sweets, prompted his thefts. After two years the boy has developed physically, has learned to control his evil tendencies and promises to become a wholesome and well-rounded man. His mental and intellectual growth had been overstimulated at the expense of lagging physical development.

If this somewhat extreme case be taken as a base upon which to build a hypothesis, it is not unreasonable to argue that children who show some slight variation from the hard and fast classification adopted for grading in schools should be considered in somewhat the same way and studied with a view to the elimination of physical defects before being punished for failure to keep up with their classes in school. If one may accept the views of a number of progressive teachers in the lower grammar and primary grades, it may be assumed that the next few years will see a material change in the method of teaching, especially in promotions. Already several classes for abnormal children have been established in public schools and private schools are springing up in which grading is attempted in a very general way only. If a child does well in arithmetic but poorly in history, he is not compelled to repeat the lessons of the past term because of failure to advance, but is carried on, advancing normally in his favorite studies and more slowly in those that he does not grasp. If one believes that mental astigmatism exists because of asymetry in growth, it is only fair to approach the problems of abnormal children with the conviction that a bodily cause can be found and to devote a most careful and painstaking analysis to each physical function in order to determine whether it measures up to the requirements of the growing mind. Abnormalities that are producing irritation, such as adenoids, bad teeth, defective vision, digestive disturbances, etc., must be promptly corrected and time enough devoted to the individual case to assure oneself that the demands of schooling are not beyond the reserve energy of the child to supply.

In the home life the same test should be applied to the daily routime and errors of conduct studied to see whether they may not have their origin in some physical defect. Knowing, as we now do, what marked influence is exerted upon growth by the secretion of the pituitary, thyroid and adrenal bodies and by the gonads the effect of irregularities in their secretion in children should receive more attention. It is more than likely that laziness and inattention are not evidences of original sin but are the result of faulty metabolism, possibly of biliary or gastrointestinal origin, while a persistent thymus may be the unsuspected source of mental dulness as well as physical status lymphaticus. A slight degree of hypothyroidism may be as common in children as in adults and may possibly play a more important role than is generally thought. Cretinism is by no means the only manifestation of abnormal thyroid development. Pediatrics is rapidly assuming a position of prime importance in medical practice and it is time that its principles should be applied more generally to these neglected problems in the development of the child.—Editorial, Long Island Med. Jour.

Meningism in Scarlatina and Scarlatinal Uremia.—Pierre Mauriac and P. Philip Ann. de med et chir. inf., Oct. 1914) discuss the condition seen in scarlatina when the symptoms are similar to meningitis, but in which the duration of the condition is comparatively short and recovery rapid. They ask whether we should consider this a true meningitis or no. This condition also occurs in the uremia of scarlatina. Weil reports such a case in a soldier who in the course of scarlatina presented symptoms that led to the diagnosis of the cerebrospinal meningitis; the cerebrospinal fluid showed many lymphocytes and the pressure was increased. Still at the end of a few days the symptoms disappeared. Again these meningeal states in scarlatina end in death. The authors conclude that in the presence of a scarlatina we should always be prepared for meningeal complications. When there are no complications in ears and nose, and no uremia, simple meningeal reaction without a true meningitis will explain the condition. But on this meningeal condition in weak children may be grafted all sorts of other infections, which explain acute meningitis in the course of scarlatina. If uremia occurs the meningeal symptoms may be due to intoxication and the prognosis depends on the retention of nitrogen. But when convulsive symptoms appear suddenly with a high temperature and meningeal symptoms we may expect an acute infection added to the uremic intoxication acting on the cerebrospinal axis.—Amer. Jour. Obs. and Dis. Women and Children.

Congenital Cyanosis without Auscultatory Signs.—M. Grandjean (Ann. de med. et chir inf., Oct., 1914) described a form of congenital cyanosis which shows at autopsy a uniform contraction of the pulmonary artery, and an equal thickness of the walls of the two ventricles. In these cases there are no auscultatory signs of the heart condition. This is one form of "blue baby." The heart appears larger and heavier than normal, and this hypertrophy is greater the longer life is prolonged. There is a loss of substance of the interventricular wall. The entire pulmonary artery and its branches are diminished in caliber. In some cases there is an entire absence of the pulmoary artery, and complete transposition of the aorta and pulmonary artery. There is no murmur or thrill because there is no inequality of pressure between the right and left hearts. There is no inequality in the contraction of the pulmonary artery and hence no vibration of an obstructed blood current. In these cases the cyanosis is complete, involving all parts of the body and limbs, conjunctiva and ears. At the slightest cry or exertion it deepens. The extremities are cold, crises of suffocation occur. Auscultation gives almost no signs except an enlargement of the cardiac area of dulness. The prognosis is always bad, though some children have lived to be as old as fifteen years. The child is in a state of least resistance and is subject to any infection that may approach him; the lung insufficiently supplied with blood renders him subject to tuberculosis and pneumonia. Even measles is sometimes fatal.—Amer. Jour. Obs. and Dis. Women and Children.

Motor Values in Speech.—Studying the motor values of words we find two interesting features:

1. Verbs (motor root-forms) are created from idea-roots to convey past significance in:

    (a) Latin, by t, at, et, it;
    (b) German, by t, te;
    (c) French, by remnants of t;
    (d) Japanese, by te, ta;

(e) Spanish, by id, ad;
(f) Italian, by at, ut;
(g) Slav, by l;
(h) English, by ed, t;

so that the dental sound, which is punctuate, even in the "l" liquid value, gives the sense of being cut, or cut off.

2. Infinitives are formed by an "r" in many languages:
   1. Latin, by are, ere, ire;
   2. French by er, ir, oir, re;
   3. Italian, by are, ere;
   4. Japanese, by ru;
   5. Greek, by ein;
   6. German, by en.

In Greek "a" (ah) and "n" were correlative. So that a broad continuing motor value corresponding to "r," indeed in some dialects equivalent to it, as in the terms Mariahr, sofahr, Philadelphiahr (lengthening the final ah) we see a motor value for the infinitive which seems to carry on the idea as the action is prolonged.

Futurity is indicated by a profusion of methods.

Hebrew, English, German, Japanese and Slav languages do not possess a future. In the Romance languages the infinitive is the basis of future tenses, which add the stem of have.

In Japanese, the suffix sho, which means life, is employed, or a word meaning I will be, aro (aru and sho?) is used, with the infinitive. This latter method in Russian gives us ya budu, I will be, and the infinitive (with the present participles containing value).

In German, I will become, I become, I come, to be, is used with the infinitive.

In Englsh we use, I want desire (will) and I ought, must have to (shall) with the infinitive.

All these remarks bring to the fore the phychologic structure of idea-formation, and the hope of finding the mechanical basis of thought processes, which are entangled, somehow, in the gray and white matter of the central nervous system.—Woman's Med. Jour.

Acute Pemphigus Complicating Scarlet Fever.—J. M. Robertson-Ross reports the case of a boy aged ten years in whom on the thirty-second day of an attack of scarlet fever there appeared a bullous eruption which rapidly assumed a fairly general distribution, accompanied by an irregular pyrexia and running a course of little more than six weeks.—British Journal of Children's Diseases.

Hiccough in Tuberculosis, by M. Arredondo (Revista de Medicina y Cirugia Practicas, Jan. 21, 1915)—The hiccough which is seen in tuberculosis, and which is followed by vomiting is analogous to the emesis producing cough first described by Morton. In these cases ingestion of food produces cough and vomiting; cough, then ceases. In some cases by the same mechanism hiccough is produced instead of cough. Likewise the resulting emesis found the hiccough. Such cough or hiccough is almost always found in incipient tuberculosis when there is no expectoration. Various theories of the mechanism of this hiccough have been evolved. Peter considers that it is due to hpyerexcitability of the pneumogastric, whilst others, as Mathieu, think that there is involvement of the solar plexus. There is a remarkable frequency of vomiting in early phthisis, which is best relieved by drugs such as menthol, which diminish the sensibility of the gastric mucous membrane. The same treatment is efficacious in those cases where hiccough instead of cough is the cause of the vomiting. —N. Y. Med. Jour.

Tuberculosis and Infants.—Probably the greatest advance, according to A. F. Hess, New York (Jour. A.M.A., Dec. 19), that has been made in the warfare against tuberculosis is the realization that tuberculosis is contracted to a large extent in early life. At the Tuberculosis Preventorium at Farmingdale, N. J., two hundred children are cared for who give a positive tuberculin reaction, but show no clinical signs of tuberculosis. They are selected by the tuberculosis dispensaries of New York City from households in which some member of the family is tuberculous. At the present time they represent 120 families, and an inquiry showed that there were 42 infants under 2 years of age in the 120 homes. In many families there were two infants exposed, and those received from these families have often been exposed for months, and the number of children in these families is large. It is feasible in a few cases only to safeguard the home by sending the tuberculous parents or other members of the families away. Some child-caring institutions may care for a few of the children. The babies' hospitals will not act, because they can take only sick children. A few orphans or half orphans may be cared for outside, but if the family is not entirely destitute their admission to an institution may be difficult. Not all parents, even if tuberculous, would be willing to give their well children up to an institution, but if there was a place for them there are many that are wise enough to do so. The weak and sickly mother suffering from tuberculosis will be particularly inclined to give up her infant temporarily, and it is in her case that separation is most urgently demanded. Hess suggests that, for a beginning, to meet the need it may be advisable to assign wards for such children in existing institutions, but the details of organization cannot all be formulated in advance.

Infantile Scurvy.—Infantile scurvy is a disorder characterized clinically by hemorrhage, for example, bleeding into the gums and subperiosteal hemorrhages of the long bones. A study of the cause of this bleeding, which includes a consideration of the clotting power of the blood, forms the nucleus of an investigation by A. F. Hess and M. Fish (Amer. Jour. Dis. Child., 1914, viii, 385). For the coagulation tests blood was aspirated directly from the blood-vessels and oxalated. This plasma showed a slight diminution in clotting power. The defect did not seem, however, to be the result of an insufficiency of calcium. The antithrombin was not increased. Small amounts of blood were also obtained by puncture of the finger. Examinations of this blood revealed a normal number of blood platelets. In other respects the picture was that of a simple, secondary anemia, except that the hemoglobin was diminished out of proportion to the red blood-cells. A marked regeneration of these cells during convalescence, leading to a polycythemia, was also noticed. These departures from the norm are insufficient to account for the hemorrhages associated with the disease. The integrity of the blood-vessels was therefore investigated by the "capillary resistance test." This consists in subjecting the capillaries and vessels of the arm to increased intravascular pressure, by means of an ordinary blood-pressure band, and of observing whether this strain results in the appearance of petechial hemorrhages into the skin. The vessels of normal infants were found to withstand, without apparent disturbance, 90 degrees of pressure for three minutes, whereas the vessels of infants suffering from scurvy gave way under this pressure. The test is not specific for scurvy, but is a method of demonstrating a weakness of the vessel walls, whatsoever may be its cause. Numerous petechial hemorrhages of the skin or mucous membranes were frequently noted as one of the earliest signs of scurvy; no sign, however, should be regarded as preeminently the primary symptom of scurvy. It is generally recognized that scurvy has not only an exciting cause, but a predisposing cause. The well known "exudative diathesis" of Czerny was found definitely to predispose to the development of scurvy. Whether there are other predisposing factors remains to be determined. Several cases of scurvy developed in infants who were being fed on milk which was pasteurized to 145 degrees Fahrenheit for thirty minutes. They were cured by receiving fruit juices or raw milk. Orange juice was found not to lose its efficacy as the result of being boiled for ten minutes. The juice of the peel was successfully substituted as an antiscorbutic for the juice of the orange. Potato proved to be an excellent anti-scorbutic. It is suggested that it be added to pasteurized milk as potato-water instead of the barley-water which is now commonly used as a diluent. In this way the necessity will be obviated of giving orange juice. Cod-liver oil or olive-oil, although given for weeks, did not prevent the development of scurvy. —Amer. Jour. Obs. and Dis. Women and Children.

Unappreciated Features of the School Lunch Movement.—"School lunches have become established in a large number of our cities, and a defense of their institution is now necessary," says The J.A.M.A. "The maintenance of such a service is no longer defended solely on the basis of the needs of the poorer classes, but is encouraged in ways to avert the criticism that the school lunch leads to pauperizing and to the neglect of maternal responsibility in the home. The unquestioned benefits of a well-chosen warm lunch, usually supplied at the cost of the materials and service, have impressed both teachers and parents, so that even the well-to-do commend and approve this latest innovation in the routine of the school day. As a rule, the school lunchroom provides better food than the street vender. In most places the foods are chosen by persons trained in the field of dietetics, and the variety of dietary articles offered at one cent a portion is frequently quite impressive. It includes soups, salads, sandwiches, fruits, puddings and other dishes. The New York School Lunch Committee has maintained a service available to over 24,000 children in seventeen public schools situated in districts in which the need of such service is pressing. The registration has run as high as 2,353. In addition to this noon warm-lunch service, the committee has operated a special 3-cent warm lunch of milk and crackers at 10 a. m. for anemic, ungraded and crippled classes. It begins to appear that the school-lunch movement has engendered certain features which promise to contribute to the general welfare in a direction almost as important as that of the proper nourishment of the body. Educational and social possibilities, at first unforeseen, are being brought to notice. The children of the well-to-do parents and the children of the poor have learned 'to sit quietly as one family, to talk pleasantly with each other, to eat their food properly, and many acts of courtesy and generosity have been encouraged.' "—N. Y. Medical Times.

Severe Jaundice in the Newborn Child a Cause of Spastic Cerebral Diplegia, by W. G. Spiller. Amer. Jour. of the Med. Sciences says: Among the many causes of arrest in the development of the brain, and consequently of spastic cerebral diplegia, severe jaundice of the newborn does not appear to have been recognized, and Spiller has observed four cases in which this was believed by the parents to have had an etiological relation to cerebral diplegia. The first was that of a female child, three years old when seen, who could not talk or walk alone. All movements of both the upper and lower limbs were awkward, and there were choreic movements in the whole body. The limbs were poorly developed and rigid, and both feet turned inward. The head at times was held to the left. In the other three cases described the children when first seen were respectively sixteen months, two years, and nearly four years, old.

Treatment of Nocturnal Incontinence of Urine.—Cahier, in Presse medicale for May 6, 1914, reports the results obtained in enuresis by injections of normal saline solution into the subcutaneous tissues in the perineal region. The patient being placed in the lithotomy posture and the skin asepticized with diluted tincture of iodine, an injection is made at a point half way between the root of the scrotum and the anus, on each side of the midline, one cm. from the latter. The fluid should be injected as quickly as possible in order to form, on either side, a large globular elevation containing, in the adult, eighty to one hundred grams (2 2-3 to 3 1-3 ounces) of fluid. If a fountain arrangement is used to inject the saline solution, the receptacle must be at least two metres (6 feet, 7 inches) above the point of injection, to yield the required pressure and rapid entrance of the fluid into the subcutaneous tissues. The object of the treatment is to exalt local sensitiveness by drawing upon the nerve filaments, this in turn reacting upon the neck of the bladder or the striated muscle of the urethra. The procedure occasions but little discomfort and does not oblige the patient to leave off his ordinary occupation. Generally, a single injection of the quantity of fluid mentioned on each side is sufficient. Where another injection is subsequently required, 200 grams (6 2-3 ounces) can be administered without harm.—Charlotte Med. Jour.

Frontal Sinusitis in a Girl Aged Seven.—Dr. D. McKenzie reports this case in the Proceedings of the Royal Society of Medicine.

About three months before the child was brought to the hospital she was overturned by a bicycle and thrown on her face. A fortnight later pain and swelling in the left supraorbital region and around the left eye set in, together with headache and pyrexia. After about ten days of fever and headache, the patient being confined to bed, a sudden gush of pus from the left nostril took place. Thereupon the pain ceased, the fever left her, and the child was able to be up and about, but the discharge from the nose continued. When she came to the hospital pus was seen to be oozing freely from under the left middle turbinal. A skiagram, showed well marked frontal sinuses on both sides, and the left frontal sinus, together with the left antrum, threw shadows. Treatment was confined to nasal drainage: the left middle urbinal was removed and nasal antrostomy performed and the discharge gradually ceased.

Ruminating Infant.—At a meeting of the Medical Society of Halle, Doctor Lehnerdt described (Meunch. Med. Woch., Sept. 22, 1914) what eventually he came to consider an instance of rumination in an infant half a year old; this adding one other to the 14 similar cases on record. He supplies in great detail all the data of physical condition, mode of feeding, behavior of child, and other needful factors; but these we omit, except to state that from the first the child was given to vomiting after nursing, that at three months it was bottle-fed, that it failed to thrive and wasted away, and the (seeming) puking became worse. At the age of 7 months it was taken to the hospital and closely studied.

No abnormal conditions whatever could be discovered outside of those consequent upon under-nutrition—high-grade inanition. After some days, it was observed that the putative puking was not such, but that sooner or later after feeding the child operated its jaw in a peculiar fashion, whereupon the stomach contents would be brought up and spat out; however, the child plainly chewed whatever of the stuff it could retain in the mouth and then swallowed it. Substituting pap for the liquid food, the regurgitations grew less and finally ceased, with corresponding increase in body-weight. Nevertheless, owing to the fearful wasting of the degenerated organs, the child soon afterward succumbed to an attack of pneumonia.

Nothing definite thus far is known concerning the nature of this peculiar infant rumination, but it is held to be essentially a motility neurosis. So in the present instance, the infant was distinctly neurotic, while by threats it could be made to stop, for the time, the process. —Medical Standard.

Ovarian Cyst with Torsion of the Pedicle in a Child Twelve Years of Age.—Dr. A. H. Harrigan presented this case before N. Y. Academy of Med. Sec. Gyn and Obs. The patient had abdominal pain and vomiting four days previous to admission to the hospital; the vomiting was frequent and the pain persistent, quite sharp in character, and more intense in the left iliac fossa. Urination was painful and the bowels were regular. The examination showed a symmetrical abdomen, not distended, but there was rigidity of both recti, more marked in the lower abdomen, and especially on the left side. There was tenderness in both lower quadrants, but particularly on the left side. No mass was palpable. The rectal examination revealed a definite mass in the mid line, moveable, situated behind the uterus, and as large as a good sized orange. The temperature was 99.8 degrees and the pulse ranged from 74 to 120; the respirations were 24. The white blood count was 15,000 with 78 per cent. polymorphonuclears. A definite diagnosis was not made but operation was indicated. A mass was found lying between the rectum and the uterus; this was easily delivered and seen to be a cystic tumor the size of an orange. It sprang from the left broad ligament and its pedicle had two complete turns passing from the left to the right. It was black in color and almost gangrenous. The patient made a complete recovery.

Intraspinous Infection in Experimental Poliomyelitis. By Paul F. Clark, Ph.D., and Harold L. Amoss, M.D. (Journal of Experimental Medicine, Vol. XIX, No. 2, 1914).—The routes by which the virus of poliomyelitis may be conveyed to the central nervous organs of monkeys, so as to produce infection and paralysis, are various, but not of equal certainty. The direct intracerebral injection yields the most constant results, next to which the intrasciatic and intranasal have been placed. Infection by way of the peritoneal cavity, subcutaneous tissues, and blood is obtained with far less certainty.

By intraspinous injections of specimens of poliomyelitic virus of suitable virulence infection can be caused regularly in Macacus rhesus monkeys.

The virus passes from the subarachnoid spaces into the nervous tissues, in which it multiplies, and into the blood.

The constant involvement of the pia-arachnoid membranes in this infection, even when no paralysis occurs, and the fact that infection can readily be produced by intraspinous inoculation, suggest anew that in the pathogenesis of poliomyelitis and interstitial tissue changes within the meninges, blood-vessels, and ground substance play a determining part.

While the virus injected into the subarachnoid spaces can be demonstrated there by inoculation tests forty-eight hours after the injection, it can no longer be detected on the sixth day, at a time when the first symptoms of infection make their appearance. The failure of the cerebro-spinal fluid from human and experimental cases of poliomyelitis to produce the disease when inoculated into monkeys is due to the fact that the virus is either fixed by the nervous tissues or passes into the blood.—J. P. Kinloch.

A Consideration of Two Outbreaks of So-called Pemphigus Neonatorum.—By Andrew Porter Biddle (Journal of Cutaneous Diseases, April, 1914, p. 268). The two outbreaks with which this paper deals occurred in a private woman's hospital and in a public lying-in institution. In these, babies and a certain number of nursing mothers and nurses were affected. The mothers were attacked on the nipples and buttocks, while the nurses were attacked on the exposed parts of the body such as the face, fingers, and ears. In the adults the eruption resembled ordinary impetigo contagiosa, was comparatively mild, and yielded readily to treatment; while in the children the disease was much more extensive and severe, being especially prevalent over the trunk and buttocks. The cases were all typical of pemphigus neonatorum. In some cases there were high fever and severe constitutional symptoms, while in others the temperature scarcely rose above the normal. There were no fatal results. No specific organism was found, though staphylococcus pyognes aurens was demonstrated in the bullae. The treatment adopted was blackwash continuously applied, enforced isolation, and careful nursing.

BOOK REVIEWS

A Manual of Diseases of Infants and Children, by John Ruhrah, M.D., Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore, Md. Fourth edition, thoroughly revised. 12mo. volume of 552 pages, 175 illustrations. Philadelphia and London. W. B. Saudners Company, 1915. Cloth, $2.50 net.

The cordial reception extended Ruhrah's Manual of Diseases of Infants and Children has made it necessary for the publishers to bring out the fourth edition of the valuable work, which was intended primarily for the medical student and the busy general practitioner, not however to supplant the larger text-books on this subject, but to enable the student to grasp quickly the more important phases of the subject of pediatrics, and to furnish him as well as the busy practitioner with a rapid reference book for clinical use. Dr. Ruhrah, in the preparation of this manual, has consulted the more important text books as well as the periodical literature of the age. This fourth edition contains numerous minor changes and some important additions among which may be mentioned the insertion of an article on pellagra in children, the use of soy bean in the feeding of children, and in the section on infant feeding, the author has included a chapter on drug eruptions with a full account of the Binet-Simon test for measuring the mentality of children. With the many changes, the author has kept an eye on the scope of the book so as not to impair its value for rapid references in the wards or clinics. A value feature of the work is the marginal references to more voluminous works of certain subjects which the reader may, if he chooses, find reference for deeper search into the subject. The author devotes considerable space to the subject of infectious diseases which is thoroughly brought up to date. The book is well illustrated and the student and general practitioner alike, will welcome this volume to his library table. The publishers, recognizing its practical value, turn it from their presses on good paper, well bound in substantial buckram. It is a work that the reviewer can commend to the profession.

Differential Diagnosis, presented through an analysis of 317 cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Octavo of 709 pages, 254 illustrations. Philadelphia and London: W. B. Saunders Co., 1914. Cloth, $5.50; half Morocco, $7.00.

Boston seems to be the home of case-history teaching in America. Walter B. Cannon is the accredited father of the case-history method in medical teaching. His idea was put into practice by Burrill and Blake in case-histories and surgery; by Morse in case-history in pediatrics; by Cabot in case-history in medicine. Other Boston men have written volumes of case-histories—Dr. Taylor in Neurology, Dr. Mumford in Surgery, Dr. De Normandie in Obstetrics and Dr. Green in Diseases of Women, and the latest is Differential Diagnosis by Cabot. Volume 1, was a stimulating, suggestive and successful book. Volume II, just published, is a welcome response to an encore. This volume contains 19 chapters embracing the following symptoms: Abdominal and other tumors, vertigo, diarrhoea, hematemesis, enlarged glands, blood in stools, swelling of the face, hemoptysis, edema of legs, frequent micturition and polyuria fainting, hoarseness, pallor, swelling of arm, delirium, palpitation and arhythmia, tremor, ascites and abdominal enlargement. To illustrate these symptoms, the author records and analyses 317 cases. The case histories are selected with such discriminating judgment that probably a large percentage of our cases would be better understood after a study of this book. There is one rather serious difficulty in these volumes, and that difficulty may be inherent in learning itself. They seem to be better adapted for reading and reflection than for reference. When the physician is confronted with an actual case of dyspepsia, he hardly has time to read forty case histories. The author stated in his first volume, that the great danger in diagnosis was that the true disease would never even be thought of. After the physician thinks of two possibilities, it is usually easy to decide correctly which alternative is the more likely. The danger lies in the fact that the disease may really be a third or fourth disease, not even under consideration. Unquestionably, this work is of great value in enlarging the great possibilities to be taken under consideration, and as this is a point of importance, they satisfy a want. Perhaps the most important chapter in the book is that devoted to dyspepsia. It is refreshing to encounter a work which has plainly been composed, not with reference to the author's favorite views or whims, but with strict regard for the actual frequency of incidence of the diseases and conditions discussed. This chapter comprises about 100 pages, of which only eight constitute discussion of dyspepsia in general. A contrast is drawn between two intrinsic gastric causes, cancer and ulcer, and the extrinsic causes, such as pregnancy, nephritis, tuberculosis, starvation, gallstones, angina pectoris, locomotor ataxia, lead poisoning, organic cerebral disease, and finally, industrial and mental strain. This volume embodies substantial paper and binding, good illustrations, scientific methods—diseases are grouped, and in this respect, this volume is a sequel to the earlier volume on the same subject.

Here the busy practitioner will find a systematic key of diseases and symptoms, so that as fast as a given disease is thought of, all its symptoms could be easily referred to. Nowhere else in medical literature can be had a work embracing such keenly critical judgment nor such convincing logic.

Sex Morality, Past, Present and Future, by William J Robinson, M.D., with the collaboration of Drs. Leo Jacobi, James P. Warbasse, Edwin C. Walker, James F. Morton, Jr., B. S. Talmey and Maude Glasgow. 177 pages, cloth binding, $1.00. The Critic and Guide Company, 12 Mt. Morris Pk., West, New York City.

This is Dr. Robinson's latest work on the sexual problem. It is one of the most thoughtful and outspoken discussions on sex morality in the English language and to the matured thinker, it should help to clarify the views and opinions on this extremely vital subject. The collaborators with the author make up a radical class of free thinkers who present in a measure advanced views on this subject. No doubt it will be many years before there will be a unanimity of opinion on the sex question. It is an interesting and readable work on a subject that is not thoroughly understood even by the profession, and to those interested in the subject we can heartily commend this little volume.

Some Important Memoranda for the Busy Physician. Pamphlet issued by the Fellows Medical Manufacturing Co., Ltd., N. Y. Obtainable by the profession on request.

This is a collection of data, mainly regarding diagnosis, from medical journals during the past year, the authorities being cited in a bibliographic list. Twilight sleep, Osler's spots, various signs of nearly pathognomonic value, formulae for iodine and other solutions, stains, and a variety of diagnostic tests are discussed. Among the last are Abderhalden's Babinski's, Boas's, Einhorn's thread, Garrod's for gout, Gluzinski's for gastric ulcer, several tests for occult blood, etc. Able editing is shown in the selection and in the condensation of lengthy reports and the result is a great saving of time for reference.

PEDIATRICS

Vol. XXVII MAY, 1915 No. 5

EDITORIAL

VITAMINES OF MILK

It has long been recognized that in many respects cow's milk is not available or its use is contraindicated, and then of fact is well appreciated that there are occasions when breast milk is not available or its use is contraindicated and then of course, resort must be had to the best substitute to be obtained. It is on such occasions that the difficulties in feeding an infant so that it shall be properly nourished supervene. It may be superfluous to once again insist that whenever possible a baby should be breast fed and to deprecate the tendency of mothers in these times to avoid nourishing their infants without any or sufficient cause for shirking their natural and manifest duties. However, if it is taken for granted that the mother is really unable to feed her child, the question then arises, as to the most suitable substitute. A general agreement has been reached that cow's milk modified to conform as nearly as possible to human milk, as fresh as it can be obtained and free from gross pollutions and hurtful germs is the best substitute that can be procured.

The obstacles in the way of gaining the desired object are manifold, but it is not the intention here to discuss a subject which has been dealt with exhaustively.

Most authorities on the nutrition of infants now concede that mother's milk contains a substance, the exact nature of which is not known and which is absent from the milk of other animals. True it is that cow's milk can be so modified as to supply a fairly effective substitute, but it is never so nutritious as human milk.

Again, really fresh pure milk is extremely difficult to obtain and moreover the high cost places it beyond the reach of all but the rich. Therefore sterilization of milk by boiling and partial sterilization by pasteurization came into vogue The advocates of pasteurization insist that when properly done it affords a safeguard against infection by the germs of most diseases while the process impairs but to a slight extent the nutritive properties of the milk. The opponents of pasteurization say that pasteurization does impair considerably the nutritive properties and is a fruitful cause of rickets and scurvy in infants.

Recently, investigations have been going on with the view of finding out the constituents of food-stuffs and much progress has been made in this direction. New constituents have been said to be detected, indeed it may be said, have been detected known as vitamines. The role of the vitamines in metabolism is not yet properly settled but it is probable that they are "activators" or hormones whose work lies in the digestion and application of the food stuffs.

Diseases known as deficiency diseases are due to the lack of vitamines, for instance, condensed milk, boiled milk and even pasteurized milk owing to this want or comparative want of vitamines may produce scurvy and rickets in infants fed solely on such food. A concise definition of vitamines will be somewhat as follows: They are substances of unknown constitution which exist in very small amounts in the natural food stuffs and are necessary, some for nutrition and others for growth. As said before the deficiency or absence of vitamines in milk used as infants' food bring about deficiency diseases.

Osborne, Mendel, Hopkins, McCollom, Davie and Funk have been the chief delvers into this subject and by their researches have made long steps in elucidating the physiology and pathology of such diseases as beri-beri, scurvy, pellagra and rickets. It goes without saying, that if the mother herself suffers from a deficiency disease, the child will also suffer because her milk is deficient in these indispensable vitamines. Further, according to experiments made on animals by the above named investigaters, it seems to be conclusively shown that milk in which vitamines are absent or deficient are a wholly insufficient means of nutriment, and if it can be definitely proved that boiling or pasteurizing milk either destroys or reduces the quantity of vitamines, then a strong case will have been furnished against both these methods, although it must be borne in mind that these principles can be supplied in an independent form, in orange juice or grape juice for example. There is fairly strong evidence that boiling milk, at any rate, destroys something essential for normal metabolism and its destruction leads to scurvy in infants and small animals fed with such milk. Frolich observed that guinea-pigs fed with milk heated to 100 degrees C. for ten and thirty minutes or to 112 degrees C. for one hour, developed a high degree of fragility of the bones which is characteristic of scurvy.

This is said by some to be due to a deficiency of organic phosphorus in the food. Edie and Simpson found that fresh milk contains 1.0 per cent P_2O_5—skim milk 0.03 per cent. When milk is boiled it is to some extent denatured; the organic compounds of phosphorus are more or less destroyed. Rickets is common in children of the poor in England who are largely fed on skim milk, less common by far in the Highlands of Scotland and in Ireland where they are fed on fresh milk.

One theory is that the vitamines of milk are associated with the butter fat fraction. Funk believes that milk contains several vitamines different from each other. Enough is not known concerning the vitamines of milk or any other food to make dogmatic statements, but enough is known to infer that the theory has much to be said in its favor. If it is finally concluded that the lack or deficiency of vitamines of milk is responsible for diseases of malnutrition in infants as scurvy and rickets we shall have to revise many of the existing views with regard to the preparation of cow's milk as an infant's food.

PROGNOSIS AND TREATMENT OF ACQUIRED VALVULAR AND ACQUIRED PERICARDIAL MURMURS

According to Sutherland ("The Heart in Early Life"), a prognosis may be stated in precise terms, or it may be hinted at by the use of some non-committal term. In connection with any suspected affection of the heart a loosely applied term may convey a very grave significance to the lay mind. If a child is stated to have "a weak heart," or "a murmur about the heart," or a "dilated heart," or "something wrong with the heart,'' that child is at once looked on by the parents as being the subject of heart disease. We may not be asked for any other prognosis, or we may give a reassuring prognosis—it matters not, for the lay mind assesses at its own value the presence of heart disease. Hence it is advisable in connection with these cardiac disturbances not to use any term which could possibly suggest heart disease.

From the medical point of view the prognosis will depend on what view the physician takes of the significance of the disturbance. The whole of this section has been on disturbances which I regard as quite apart from heart disease in a medical sense. Consequently the prognosis does not depend on the cardiac disturbance but on any underlying disease or disorder of some other part of the body which is the primary cause of the disordered action.

The question of treatment is linked closely with that of prognosis. When these irregularities and murmurs and other forms of disturbance were insufficiently understood, it was too often the custom to anticipate cardiac disease or debility in the future, and to adopt more or less restrictive methods of treatment. The young person was restricted in all his habits and exercises, and often made a confirmed invalid because of suspected heart disease, and of possible ills that might follow. If nothing did develop this happy result was put down to the restrictive measures adopted. If the disturbance persisted the restrictions were rigidly persevered with. With a clearer knowledge of the meaning and significance of these disturbances such lines of treatment are now considered not only useless but harmful.

It may not be possible to pronounce at once as to the significance of the murmur. Regarding the youthful type of irregularity, one may state definitely and at once that it is of no importance and calls for no treatment. Regarding a cardiac murmur, one may find it advisable to watch the case for a time, before definitely deciding as to the significance of the murmur. As already stated, a knolwedge of cardiac murmurs and their significance is to be acquired only by experience. A definite decision must be come to as to whether the case is one of cardiac disturbance or of cardiac disease before any treatment is adopted.

When it has been decided that the case is one of cardiac disturbance, the important conclusion that follows is that no treatment directed to the heart is required. The patient may require to be treated, and the following suggestions are made as to the line of procedure:

1. Consider the patient, and his surroundings, and his mode of life. Often it will be found that there will be some source of unrest in these conditions which has put the system out of tune, and the removal of which leads to the disappearance of the cardiac disturbance.

2. Search for any source of irritation or any disease in other parts of the body. In many cases the cardiac disturbance is secondary to disease elsewhere, or possibly to gastro-intestinal disorder.

3. Examine very carefully into the state of the nervous system. I believe that the majority of the disturbances which have been considered are to be traced to a disordered state of the nerves, and will not be removed except by treatment directed to building up a healthy nervous system.

SOME PHYSIOLOGICAL PRINCIPLES CONCERNED IN THE NUTRITION OF INFANTS*

Thanks to the brilliant work of Emil Fischer, Emil Aberhalden, and other organic chemists working in the same school, we now have more exact information of the molecular constitution of protein bodies that we had, let us say, ten years ago. We know, for instance, that these complex bodies consist of long chains of relatively simple atomic-complexes, such as fatty acids and amino-acids, linked or combined together in ester groupings or piperazine rings. Further, we know the exact chemical constitution of the amido-acids which take part in these syntheses, and can recognize their presence by chemical tests. At least twenty separate and independent amino-acids have been thus isolated, and recognized as taking part in the specific "make-up" of the various protein bodies.

Pritchard holds to the opinion that before the process of digestion is established, if soluble proteins are introduced into the stomach of the infant, a certain proportion will be absorbed, if these proteids are foreign, such, for instance, as those contained in cow's milk or the white of egg, they will excite bio-chemical reactions, and lead to the production of specific precipitation in the blood, and as a consequence, will not subserve the functions of ordinary nutrition, and therefore, are not only useless, but may be actually dangerous. A consideration of these facts emphasizes the importance of maternal feeding. Pritchard points out that the colostrum of a wet-nurse does not contain exactly the same proteins as the colostrum of the mother, and therefore, is not exactly suited to the requirements of the infant. If will be much safer to feed a new born infant with the colostrum of a wet-nurse than with the milk of some foreign species of animal, the cow or goat, for instance; yet there are dangers attaching even to this procedure, and wet-nursing should not be attempted during the first few days of life.

---

*Nutrition and Management of the Infant, by Eric Pritchard.

In the make-up of the various protein substances, there are quantitative as well as qualitative variations; thus, egg-albumin does not contain among its constituent amino-acids representatives of the glycocoll group, while gliadin, a vegetable protein, does not contain lysin, nor does gelatine contain tyrosin or tryptophane. On the quantitative side, egg-albumin has been shown to contain only 8 per cent of glutaminic acid, while in gliadin it is represented to the extent of 33 per cent.

In the light of this knowledge, it is easy to understand that when one proteid is built up, so to speak, out of the ashes of another, there may be synthetic difficulties owing to the absence or relative deficiency of some particular amino-acid, or of some atomic grouping, or, indeed, there may be excess of certain amino-acids which must be disposed of. For instance, we cannot expect the organism to build up its own specific serum-albumin out of gelatine or out of a vegetable protein such as gliadin, for the former contains no tyrosin or tryptophane, and the latter no lysin, all of which amino-acids are required for the "make-up" of serum-albumin; but we could well imagine, as, indeed, is the case, that the organism might maintain nutrition on a diet of gelatine plus the requisite quantity of lysin. A knowledge of these facts explains why calf's-foot jelly, at one time so greatly valued as an invalid food, and subsequently held in such scientific contempt, can be an excellent food in combination with beef-tea, and yet of little nutritive value as an exclusive food; it also explains the advantages of a mixed diet.

The whole question of the resolution of foreign proteins into their component elements, or amino-acids, is of immense importance in infant dieteties, for unless foreign proteins can be so resolved in the processes of digestion, they cannot be utilized for the purposes of synthetically compounding the specific proteins which are essential for the nutrition of the growing baby.

POSTURE AND DIGESTION IN INFANCY

The "modern method" of bringing up the baby is in many ways radically different from the "old-fashioned" method and in none more so than the question of feeding. Old sayings and grandmother's advice are here all firmly entrenched and the conflict between the young mother and the grandmother at times becomes acute. The physician trained in the scientific school is only too apt to laugh at the old-fashioned empiric advice and yet it is probable that each old saw has at heart the necessary grain of truth that keeps it alive. For many years the modern teaching was that an infant, after feeding, should not be joggled about, but should be laid in its crib and allowed to go to sleep. Only too often the child refused to sleep, but lay and howled lustily to the disturbance of the neighbors and the distress of the mother. The mother is greatly chagrined if the grandmother picks the child up, holds it on her shoulder a minute and pats it gently and then sees it go to sleep almost as soon as it is laid upon the bed.

The old lady would say the trouble was due to gas in the stomach and Smith and LeWald have recently shown (American Journal of Diseases of Children, 1915 IX, 216) by the use of radiographs that she was right. They explain how an infant taking liquid food is unable to avoid swallowing a certain amount of air with each act of deglutition and then present radiographs that show stomachs often enormously dilated, largly with gas, immediately after feeding. This gas on analysis proves to be air, for only in cases of extreme gastric stagnation is the gas formed in the stomach. As soon as the child is held erect and patted gently on the back it eructates the gas and becomes quiet and the radiograph shows that the stomach is now contracted down upon and is completely filled by the food. This process is due in a measure to the relation of the parts so that if the stomach is partially filled with fluid and the child in the horizontal position, the gastric contents rise above the esophageal opening, forming a good water trap and preventing the escape of the gas into the esophagus. The authors above mentioned are firmly convinced that many cases of vomiting are due to this gastric distention and that it is better for the child to take its feeding rapidly, for then the number of swallowing acts are fewer and the amount of air in the stomach is less. Vomiting hither to thought to be due to too rapid feeding they think is due rather to overfeeding. In hospital patients who are permitted to lie in bed for long periods a chronic dilatation may result. The importance of thus holding the child erect after the feeding is one that is apparently neglected by most of the textbooks, and in view of the erroneous teachings of the past it is worth while to lay some special emphasis on the subject at this time.—Exchange.

PEDIATRICS

ORIGINAL ARTICLES

COLLES FRACTURE*

BY E. LEE HEFLIN, M.D.
Louisville, Kentucky

Colles fracture is a fracture of the lower end of the radius within about one inch of the articular surface. It ranks second in point of frequency, fracture of the ribs being first. While it is so common in adults, it is unusual in children.

It is usually caused by falling on the outstretched hand, the force coming on the front or palmar surface, never on the back of the hand. The upper fragment is driven downward toward the palm of the hand; the lower fragment upward on the posterior surface. There is also a lateral luxation of the lower fragment toward the radial side, never toward the ulnar side.

The symptoms of Colles fracture differ from ordinary fracture. It was considered a dislocation of the wrist until the year 1814, when Colles, of Dublin, recognized it as a fracture. Crepitus, the usual symptom of fracture, is often absent. It is best obtained by alternate hyperextension and flexion. The hand is abducted (drawn to the radial side) and pronated The head of the ulna is prominent. Ordinarily the styloid process of the radius is on a lower level than the styloid process of the ulna; in fracture it is raised, and is on the same level or sometimes higher. These processes should always be carefully examined, and should be compared with the uninjured arm; in fact, in any injury the corresponding part should be compared. Pain is an important symptom. It not only indicates fracture, but also indicates whether it has been properly reduced. Properly set Colles fractures are not painful. Persistent pain indicates that something is wrong. Tenderness along line of fracture is an important symptom, and one that is elicited when other symptoms are absent. Marked swelling on posterior surface is always a suspicious symptom. Pronation and supination are lost. The lower fragment may mount on back of lower end of upper fragment, causing a dorsal projection, termed by Liston "the silver fork deformity." This deformity is often not present; in fact, there are many cases in which there is no deformity, merely pain, tenderness and swelling. A transverse ridge is sometimes present on the posterior and external surface of the radius corresponding to the line of fracture. Radiography will always dispel all doubt. Two pictures should usually be taken, lateral and antero-posterior views.

---

*Read before the West End Medical Society, of Louisville, Ky., April 13, 1915.

There are many complications in Colles fracture. Keen states that impaction occurs in about fifty per cent of the cases. Fracture of the styloid process of the ulna occurs in about fifty to sixty-five per cent of all the cases. Among other complications are: fracture through lower end of ulna; rupture of intra-articular triangular fibro-cartilage; perforation of the skin by either fragment, making a compound fracture; and fracture of the scaphoid. It is well to remember that a sprain of the wrist, forearm, elbow or shoulder may occur at the same time as the fracture, the symptoms of which will be especially noticeable three or four days after the injury.

Prognosis.— Murphy states that from eighty-five to ninety-two per cent of Colles fracture result badly. It is certain that many of these cases are followed by deformity and more or less pain, but I believe that most of them eventually get fairly useful arms. Owing to the location and the bone being so superficial, the slightest deformity is very noticeable. If early and persistent manipulation of the fingers is neglected, more or less stiffness is likely to result.

Treatment.—The first and most important point in the treatment of a Colles fracture is the complete reduction. This should be done, not by pulling, but by manipulation—by hyperextension. Grasp the upper and lower fragments with the thumb and forefingers of the two hands, bend the lower fragment backward until it is entirely free, then push into place with the thumbs and let the hand fall into its normal position. If the fracture is completely reduced, it will remain in position. Fractures, ordinarily, when reduced, have a tendency to recur; not so with a Colles fracture. If it recurs, it was not reduced; and again, if the pain persists, it is likely that the bones are not in apposition.

Many different kinds of splints have been used; the Bond, the Levis, the Gordon, moulded splints, plaster of Paris, adhesive plaster, etc., etc. The straight dorsal splint, as first suggested by Roberts, has been very satisfactory in my hands. It consists of a straight splint well padded, extending from the base of the fingers to a little above the middle of the forearm. This is held in place by adhesive strips and a roller bandage applied snugly but not tight. Tight bandages have done a great deal of harm in this class of fractures. In some cases I have used two straight splints, the length being about the same. A pad should be placed on the anterior surface over lower extremity of the forearm. The arm is carried in a sling that supports the wrist, not the hand. Long ago Sir Astley Cooper treated Colles fracture by simply carrying the arm in a sling.

Whether an anesthetic is needed will depend entirely on the case. If there is any doubt about the reduction or diagnosis, or if the patient is very sensitive to pain, partial anesthesia at least should be advised. If possble the diagnosis and position should be verified in every case by the X-ray examination. The fingers should be manipulated from the first. Gentle massage should be instituted to the fingers, hand, wrist, and forearm during the second week. Union is fairly firm in about three weeks. The splints should be worn for about four weeks. The patient should be careful for some time after removal of the splints.

My idea in presenting this very frequent fracture for consideration is to emphasize the importance of having an X-ray examination made of all doubtful injuries occurring in this region; to suggest that this fracture be reduced, not by extension and counter-extension, but by hyper-extension; to be certain that the bones are in correct apposition; and, again, to remember that the simplest dressing, comfortably applied, is the best—in my experience the straight posterior splint.

THE RELATIONSHIP OF PULMONARY TUBERCULOSIS IN CHILDHOOD (HILUM PHTHISIS) TO THE PHTHSISI OF ADULT LIFE, WITH A COMPARISON OF THEIR SYMPTOMS AND SIGNS*

BY J. P. CULLEN, M.D.

Chief Medical Officer, Borough of Popular Tuberculosis Dispensary;
Late House Physician, London Hospital; and House Surgeon,
N. E. London Children's Hospital, Etc.
Syracuse, N. Y.

The possible channels of infection in the Phthisis of Adult life are fairly well known, and may be classed in order of their importance as aerogenic, dietetic, and of more academic interest, inoculation and hereditary.

In Hilum Disease, in which X-ray examination shows the most obvious changes to exist at the roots of the lungs, viz., enlarged glands, matted or discrete, and coarse radiating striæ, with only in the later stages involvement of the lung tissue proper, the chief portals of entry are, as in the adult form, aerogenic and dietetic. Some confusion has, however, arisen as to the chronological order of events in the lungs and glands respectively, for which, perhaps, the use of the Roentgen rays is to some extent responsible, and a further consideration of these two methods of infection is necessary.

(1) The aerogenic group, due to inhalation of tubercle bacilli. As these germs are not endowed with mobility, it is necessary that they shall be taken up by leucocytes, and so carried into the lung tissue proper. Such leucocytes exist free in the alveoli, and Hamilton has shown that only in the alveoli can such infection take place, as the isolating properties of the basement membrane prevent infection in any other part of the air passages. Bacilli carrying leucocytes may come to rest and disintegrate in any part of their wanderings, either at the start giving rise to the terminal bronchiolitis which Rindfleisch has shown to be the commonest initial lesion in adult tuberculosis, in the course of the lymphatics, involving the vessel walls in a lymphangitis which shows itself under the X-rays as an arborescent network of fine or coarse striæ, or finally in the meshwork of the lymphatic glands at the hilum of the lungs, giving rise to the opacities so common in this region

---

*The Practitioner.

(2) Infection by the Alimentary Canal.—While the relative importance of this method, as compared with (1) is still sub judice, certain facts admitting of very little controversy must be kept in mind. The lymphatics of the intestines end in the mesenteric glands; these again are in direct communication with the receptaculum chyli, and via the thoracic duct with the left subclavian vein. There is nothing to prevent tubercle bacilli traveling along these paths, and then, via the small radicles of the pulmonary artery, which, as Zuckerkandl has shown, supply the terminal bronchioles, infecting the lung tissue proper, and secondarily the lymphatics draining the infected area. Such lymphatic involvement is, however, always secondary, and the theory of Weleminsky (Weleminsky zur Pathogenese der Lungentuberculose), that the bronchial glands can be involved directly by infected lymph, received from the mesenteric glands, has been shown to rest on no anatomical basis. The bronchial glands are connected with the lungs, and are not the terminal reservoirs that Weleminsky asserts, and his views may be definitely ruled out of court.

The conclusions, therefore, arrived at are that, in both adult and infantile tubercle the path of infection is identical, in both it is at first pulmonary, and the point of entry is the vicinity of the terminal bronchiole. In the adult, possibly owing to blocking of the lymph paths by a previous lymphangitis—tuberculous or due to mechanical irritation, e.g., dust—the bacilli at first remain localized to the neighborhood of the point of entry, and a bronchiolitis and broncho-pneumonia are produced, which undergo the usual changes of caseation, fibrosis, calcification, or softening. In childhood, the above agencies are not called into play to such an extent, so that the infection does not remain local, lymphatic involvement takes place, the glands and the lymphatics themselves in part or whole of their course are definitely infected. It is not necessary, in any case, to pre-suppose, as has been done, a retrograde flow of lymph, which is contrary to all anatomical teaching. The path of infection is always centripetal, and the symptoms and signs will depend on where arrest of the bacilli occurs.

In the adult type this takes place at the beginning of its journey, leading to direct implication of a mucous surface. Local symptoms, e.g., cough, expectoration, hæmoptysis, are then those for which the patient usually seeks advice. General symptoms make their appearance later on. Physical signs, owing to the situation of the lesion, are sufficiently well marked to enable an early diagnosis to be made by the usual methods of inspection, palpation, percussion and auscultation.

In childhood, local symptoms are indefinite. There may be reflex cough and perhaps vomiting, attributed in some cases to irritation of the vagus. General symptoms are more marked. The patient is languid, anaemic, perhaps suffers from night sweats or slight evening pyrexia, and growth and nutrition are interfered with. Physical signs, owing to the depth of the lesions from the surface, are by no means obvious; enlargement of the oval interspinous area of dulness, with prominent venules over the region of the first to the fifth dorsal spines, crepitations in the nipple region, and harsh or cog-wheel sounds at the apices are the signs which suggest further examination, which is usually by means of the Roentgen rays, when the morbid appearance above mentioned may be disclosed. Pressure signs and symptoms occupy many pages in text-books; in practice, they may safely be disregarded.

Adult and Infantile Phthisis are therefore one and the same disease, the difference in their symptoms and signs are explicable on anatomical peculiarities. The affection in childhood may remain limited to the lymphatic paths, and in this case the prognosis is good, provided the disease is recognized early—in many cases, this can only be done by means of radiography—and treated by cod-liver oil and fresh air. Wrongly diagnosed, or diagnosed too late, the parenchyma of the lung is affected, and the case, perhaps comparatively late in life, passes into the adult variety, with far gloomier prospects of recovery.

CAUSES OF OBSCURE FEVER IN INFANCY AND CHILDHOOD*

BY PHILIP S. POTTER, A.B., M.D.

Before taking up this subject it might be well to consider the normal temperature of the infant, the method of recording it, and the influence the nervous system plays in its regulation.

---

*Read before Syracuse Academy of Medicine, Oct. 6, 1914.

Through a series of observation made by Dr. Kerley on seventy-four well children, the temperature was found to vary from 98 to 99. When it was every day above 99.5, some abnormal condition was always found to account for it. Not uncommonly there will be a rise above this point, apparently of little significance, as was mentioned by Dr. Kerley in a youngster where a temperature of 103 was found, remaining at this point for three hours and then falling to normal without any other manifestations of trouble.

The temperature of an infant should always be taken in the rectum. For those under five years the mouth is not only unsafe, for obvious reasons, but is also unreliable, because it is hard to have the child keep his lips closed the requisite three or four minutes.

Before being excited by a rise of temperature, one should always be sure that it is really elevated. Occasionally it is found that the family thermometer registers a degree or two too high. In one of my own cases, where I had taken the temperature and found it 100, within half an hour the father called me up and said he had just taken the temperature and found it 105. I went back, took the temperature again with my own thermometer, and still found it 100. As near as I could ascertain, just before inserting into the rectum, he had washed his thermometer under the hot water faucet.

Different children vary in the degree of nervous instability and therewith a tendency to pyrexia. Such a thing as a simple constipation will raise the temperature in one child, while in another child of the same age, it will not be affected at all. Temporary elevations of temperature may sometimes be due to active exercise or over-fatigue, and are usually seen in children of neurotic parents. Such a temperature is usually an afternoon temperature.

Fever in the New-Born.—This is described by Holt in his text book as Inanition Fever, although he says this is not a satisfactory term but is adopted because it emphasizes the very close connection which exists between the rise of temperature and the condition of inanition or starvation. This elevation of temperature is seen during the first five days of life and rapidly disappears when the baby is put upon a full breast, when artificial feeding is begun or water given freely. This temperature rises to 102 degrees or even 104 degrees, and is accompanied by no evidences of local disease, that is, it is to be distinguished from a fever due to pyogenic disease, which rarely appears before the fifth or sixth day. Dr. Morse is inclined to take exception to this; first, because at other periods of infancy, starvation is always associated with sub normal temperature unless there is an infection; and secondly, it is known that infection may occur not only during and immediately after birth, but that even before birth the opportunities for infection are numerous. He explains the rapid fall in temperature in these cases coincident with the ingestion of sufficient food or water by the rapid elimination of toxic products as the result of the increased quantities of fluid taken or by the action of antitoxins derived from the milk.

One must also bear in mind that the too vigorous use of external applications may cause a rise in temperature, as in the case of the infant who from this cause had a temperature of 107 degrees.

Otitis Media.—One of the most common causes of fever of obscure origin in babies is an inflammation of the middle ear. This is very commonly overlooked because the baby does not show signs of pain, or even symptoms referable to the ear. Absence of pain does not disprove the presence of an acute suppurative otitis media. In some instances there is a pain, but as in the case of an older child, has been referred to the knee or elbow. In regard to the temperature itself, it may be high and of short duration, or low and of long duration, or irregular, leading to the suspicion of malaria or tuberlosis. In cases of obscure fever, where after a thorough physical examination nothing can be found to account for this rise in temperature, the middle ear should be examined by a speculum, and especially so if the baby has been having a rhinitis. Nor can this aural examination always be relied upon. In some instances after an examination by an expert aurist with a negative result, within twenty-four hours the membrane has broken, followed by a profouse discharge from the ear. Discussing this phase of the question with a well-known aurist, I asked him to explain it to me. He said he has seen the same thing happen, and he calls them border line cases. He said the change took place so quickly that when there was a suspicion of involvement of the middle ear which showed nothing on examination, it required examination every half hour.

Acute Pyelitis.—This is a cause of high fever in infancy that is very apt to be overlooked, because of the failure to examine the urine. It occurs mostly in female infants, and is usually secondary to some disease of the gastroenteric tract, the invading organism being the colon bacillus. The onset is sudden, the temperature high and irregular and continuous if not recognized and properly treated. In some infants the occurrence of shivering or rigor is an early symptom. As rigors are extremely rare in infancy, their occurrence may be of some diagnostic value.

In a majority of cases there are no symptoms which call attention to the urinary tract, the diagnosis not being made until the urine is examined or purulent spots noticed on the diaper. The diagnostic cell is the caudate cell.

Intestinal Toxemia.—Acute elevations of temperature due to this factor are as a rule easily recognized, because of the marked symptoms of vomiting, diarrhoea or obstinate constipation. This is usually accompanied by an excess of indican and ethereal sulphates in the urine, still the absence of an increase in them does not, however, rule out intestinal autointoxication.

It should be remembered in this connection that in infancy only a small amount of poison is needed to produce some symptoms, because at this period of life the nervous system is immature and easily irritated, also the intestinal epithelium and liver cells are not as strong in infancy and early childhood as they are in later life.

Prolonged Slight Fever.—This type of fever persists for weeks and months without any signs or symptoms to explain it. It is usually normal in the morning and runs up to about 100 degrees towards evening. It may run for a time with hardly any intermissions, or it may be intermittent, being up for days and weeks at a time, then normal for days and weeks, and so on. These children are almost markedly nervous children, and usually children of neurotic parentage. Some of these children show at times a slight disorder of the digestive tract, while others show no symptoms at all, yet the temperature yields to the regulation of the diet. If the trouble is due to the inability to digest fats and to a less extent carbohydrates, the stools are noticed either to be hard and white or else soft, clay colored, with mucus. These children must be put on a long continued diet of proteids, lean meat, white of eggs and skimmed milk, with a small amount of starch and fruit; older children, green vegetables.

In some children there is a high temperature due to ingestion of an excess of carbohydrates. This temperature sometimes reaches the maximum of 104 degrees F., lasting from one to several days. With it there is anorexia, headache, malaise, occasionally collapse. The fever is entirely out of proportion to the evidences of indigestion, and may therefore draw the attention away from the intestinal tract. Possibly the cause lies in the products of fermentation, a kind of toxemia.

In the majority of cases in which there is a low grade of fever for a long time, Dr. Morse says his experience leads him to believe there is a decomposition of proteids. When such is the case, the temperature yields to a milk and starchy diet, combined with proper hygiene and mild laxatives. The carbohydrate diet furnishes a medium on which putrefactive bacteria do not thrive, favors the growth of antagonistic bacteria, and thus diminishes the proteid putrefaction and intestinal auto-intoxication. Buttermilk is often useful in these cases for the same reason.

Another possibility of a prolonged fever of an intermittent type which must be kept in mind is that due to the round worm. Several times I have seen this happen. A child four years old, in the wards of one of my hospitals, ran a temperature of this kind for two weeks, and outside of the temperature had all the symptoms of a pneumonia without the signs. Finally he passed two round worms, and all the symptoms cleared up.

Dentition.—Although it is a dangerous doctrine to attribute elevations of temperature to the worry of dentition, experience of many clinical observers has shown that in many infants the temperature will rise to 102 degrees to 103 degrees, when the tooth is nearing eruption, falling to normal within a few hours after the tooth is cut. The same thing has happened after lancing a gum. Still in a large majority of cases, the real cause is some disturbance of metabolism or intestinal intoxication.

In this connection I cannot help but quote from Dr. Holt, who says: "The physician who starts out with the idea that in infancy dentition may produce all symptoms, usually gets no further than this in his etiological investigations. Although no doubt the importance of dentition as an etiological factor in disease has been in the past greatly exaggerated, the careful and candid observer must admit that, particularly in delicate, nervous children, dentition may produce many reflex symptoms, some even of quite an alarming character."

Influenza.—Although in the majority of cases this etiological factor ought not to cause much trouble, there are times in isolated cases it has done this, especially in infants. In the febrile cases the temperature is very high and usually fluctuating, going up sometimes in the afternoon to 105 degrees and 106 degrees, and in the morning being subnormal. This type of temperature is unlike that seen in any other disease. The patient appears scarcely ill at all, and nothing can be found to account for this temperature.

Tuberculosis.—Many physicians are prone to consider a long continued fever due to a hidden tuberculosis, although the physical signs are indefinite and in many instances entirely wanting. My own experience is that most of these children are ingesting large amounts of carbohydrates. They show the symptoms of tuberculosis; however, they do not show physical signs, nor do they react to the tuberculin test. Still one must bear in mind the possibilities of latent tubercles, perhaps in the mesenteric glands or elsewhere. When the internal lymph nodes are involved, there are no signs, unless they be those from pressure upon neighboring organs.

In infancy, however, there may be a number of foci which are fewer in number than those in acute miliary tuberculosis, being seldom large enough or numerous enough to give definite physical signs. The infant then shows a disturbance of nutrition, usually a steady loss of weight, accompanied by an elevation of temperature The course is chronic, running weeks or months. As the diagnosis of this type of tuberculosis and tuberculosis of the internal lymph nodes is often difficult and often impossible, the use of the tuberculin test or the presence of a fluctuating opsonic index are of great value, also a history of definite exposure. But the absence of such a history does not in any way rult out tuberculosis.

Inflammatory Conditions of the Throat.—One should always make it a rule in every case of unexplained fever to inspect the throat, although there may be no symptoms to direct the attention to it. At this early age the lymphoid tissue in this region is functionally very active and in the process of active growth, therefore especially liable to disease.

Acute inflammation of these structures is easily recognized, but toxic disturbances from chronic diseases of these structures are very often unsuspected and overlooked.

A mild grade of inflammation of adenoid tissue is shown by a more or less continued fever and a disturbance of nutrition. The fever is due to absorption of toxic products and ceases almost immediately after the adenoids are removed.

One reason why this is frequently overlooked, when the tonsils are involved, is that the orifices of the crypts, which have become obstructed by leucocytes and desquamated epithelium, and finally infected by bacteria, are hidden behind the pillars.

Chronic Inflammation of Cervical Lymph Nodes.—This is often overlooked because it is supposed that the enlargement is hardly sufficient to account for the raised temperature unless they are tubercular, and in my experience they have more often been called tubercular when they were not so. Here again a tuberculin test is indispensable, before accusing these nodes of being something they are not.

Dr. Morse of Boston has promulgated a very satisfactory general rule in this connection. "An enlargement of the cervical lymph node, secondary to some acute inflammatory condition of the nose, throat or mouth, is usually not tubercular, even if long continued, and that enlargement without obvious cause is usually tubercular."

Bronchial Adenitis.—Inasmuch as obscure and long continued elevation of temperature may occur with chronic inflammation, not tubercular, of the cervical lymph nodes, it is reasonable to assume that it may occur with equal frequency with like processes in the trachea, bronchi and lungs. The signs characteristic of enlargement of these lymph nodes, such as dullness in the middle back and under the sternum, diminished respiration on one side, bronchial voice along the dorsal spinous processes, venus hum over the manubrium when the neck is extended, lymphocytosis and paroxysmal cough may be present in other conditions, or frequently wanting, and are therefore consequently unreliable.

Radioscopic examination may be of some value in giving information, but it is of no value in distinguishing tuberculous nodes from enlarged nodes due to other causes.

Rheumatism, Endocarditis, Eczema.—In infancy rheumatism is extremely rare, but after the fifth year it becomes more common. In these children, not infrequently the symptoms are limited to one joint, and in some cases the symptoms are less in the articulation than in the muscle, and are then usually referred to as growing pains, having the tendency to appear in damp weather.

The temperature is not much over 100 degrees F.; the swelling of the joint is moderate and in some cases lacking. Redness is also often lacking. Muscular spasm is often marked and in some cases the child refuses to walk. The tenderness is sometimes localized, but it may affect the ligaments, tendons and even the muscles. These symptoms may persist for two or three weeks and lead to a suspicion of incipient tuberculosis disease of the joint.

In endocarditis, the temperature may be elevated for weeks and months without any increase in the symptoms or change in the physical signs. It is a sign of danger and an indication for rest.

The fact that a fever of long duration may occur with eczema is not generally recognized, and as a result some other condition as the causative factor is looked for. It is presumably due to the absorption of toxic products from the skin.

In conclusion, I wish to say that before one considers a fever as of obscure origin, it is very essential that a careful physical examination be made. If after a careful study and thorough examination, nothing is found to cause the fever, there is in the vast majority of cases, nothing serious the matter and no cause for anxiety.

608 East Genesee St., Physicians' Bldg.

PYELITIS IN CHILDREN*

BY GEORGE J. LABEN, M.D.
Papineau, Ill.

The recognition of pyelitis in children is easy, but often overlooked, simply because the possibility of its occurrence is forgotten, and the urine of an infant is seldom examined.

Unrecognized acute pyelitis in infancy gives rise to prolonged severe fever with profound constitutional disturbances which may prove fatal. Recognized and treated, it will often subside in a few days, and even though the symptoms persist for a time they become less severe and yield to continued treatment.

A clinical picture drawn of an infant under two years: Is taken sick suddenly. Patient is hot; temperature found to be 103, ranging day by day from 101 to 105; is fretful, miserable, crying out suddenly as if in pain; often twitching of the fingers and eyelids. Vomiting may be present or absent, stools perhaps loose, costive or possibly normal. Careful examination fails to reveal any definite signs of the infant's trouble; still child is not well. No explanation of the condition is forthcoming until the urine is examined, when pus and bacteria are found.

Sex.—Pyelitis is almost, but not exclusively an affection of the female infant. This predominance of girl infants is consistent with the view that the infection of the urinary tract ascends. The vulva is soiled with feces, and the bacteria pass through the bladder and up the ureter to the kidney.

Age.—The disease is much more common in infants than in older children, because the soiling of the vulva with feces most easily occurs during the diaper age. Further, the bowels have often been loose before the onset of the pyelitis, or if there has been no diarrhoea, the stools have been unhealthy in some way—green, curdy, or offensive, sometimes only constipated. In harmony with all those facts the bacillus coli is found to be the exciting cause in the greater number of cases. Rarely is the proteus or other bacteria found. Evidently the infection must have come from the bowels. The route to the kidneys may be in some cases by the blood stream. At any rate, pyelitis does occur in the male infant as shown by symptoms suggestive of a blood infection.

---

*Read at Annual Meeting of the Iroquois-Ford Medical Society, December 1, 1914.—Illinois Med. Jour.

Symptoms.—A striking feature in most cases is the suddenness of the onset. In one case the infant being dressed by its mother, apparently well in the morning, suddenly turned blue and cold and faint. Another infant has gone out, seemingly in perfect health, with its mother, nurse or maid, when she suddenly becomes acutely ill and is brought home sick or maybe in convulsions. In come cases the supposed convulsion is a genuine chill. In other cases the infant goes blue and cold, but does not actually shiver. Dr. John Thomson, of London, England, laid stress on the importance of rigors in diagnosis, and has pointed out that they are extremely rare in infancy apart from acute pyelitis. The extreme misery and restlessness is striking, except when, owing to the severity of the infection, the infant has already fallen into a drowsy, almost comatose state.

The complexion is pale—earthy; the skin hot, dry, and with such a condition nothing has been found to account for the high fever, 103 to 104 and possibly 105, except that pus will probably be found in the urine.

In some cases the abdomen is fuller than usual. The infant seems to be discomforted more than natural. In older children definite tenderness is sometimes found over the front part of the abdomen, simulating appendicitis.

Pyelitis may assume the role of acute central disease. The child is drowsy, seems comatose; there is a muco-pus on the cornea; neck is stiff, head slightly retracted. Even there may be a squint and slight convulsive twitching of the limbs. Such cases are often taken to be meningitis.

One particular point is that the temperature is a puzzle so long as the disease remains unrecognized. Day after day it varies from 103 to 104, and may reach 105. Usually it shows no signs of abating for several weeks, but under proper treatment the temperature falls within two or three days to a much lower level, if not to normal.

The one essential, in diagnosis, is the examination of the urine, which is generally neglected. "It is a baby" and so one cannot get the urine. Therefore, the urine must be obtained by some method, and the best I know of is by catching the urine in absorbent cotton, which, if washed with a little water, will drain off the pus cells. Another plan is to lay the infant upon a waterproof mackintosh until the child urinates, and pour the water so caught into a container.

A physician may say he found the urine "clear and acid" with no albumin, yet further examination shows pus and albumin. Again, the physician says there cannot be pus, for he found no albumin. But he used the nitric acid test, and on using the boiling test with the addition of a few drops of acetic acid, being careful to fill the test tube three parts full and to boil only the upper half-inch so that the slightest turbidity may be seen by contrast, one is able to show that there is albumin, however extremely little, corresponding to the very small amount of pus found in many of these cases. The use of the nitric acid test is a common cause for overlooking traces of albumin in the urine.

Even when the urine has been found to contain a trace of albumin, there has been so little cloudiness of the unboiled specimen and such an apparent absence of deposits, that the physician has not thought it necessary to examine it microscopically. It must be remembered that the amount of pus is generally microscopic; often only five, six or even fewer pus cells found in a field under a 1-6 objective when the shaken up urine is examined, even when the symptoms are severe. It is an advantage to examine the shaken-up urine rather than the urine which had been allowed to stand or had been centrifuged. The examination of a deposit gives no idea of the relative amount of pus present. The deposit obtained by standing or centrifuging a urine which would show eight cells to the field in a fresh or shaken-up specimen does not differ from one which would show thirty cells, so that a valuable standard of comparison is lost. This principle applies not only to pyelitis but also to other urinary conditions, such as nephritis and hematuria.

The urine of pyelitis before treatment is acid, usually very acid; and commonly shows under 1-6 objective an average of about six to thirty pus cells per field, and here and there a group of perhaps 10 or 12 or more stuck together. Usually, but not always, bacilli can be seen singly, or in clumps, and in a very large majority of cases they prove to be bacilli coli.

There are some extremely misleading cases in which the diagnosis has to be made after the disease has become chronic.

These come to the doctor under the guise of marasmus—a miserable, fretful and wasting child. At first sight there seems to be enough to account for this condition.

The infant takes food badly, the stools are unhealthy and no one has doubted but that the trouble was simply digestive.

The extraordinary fretfulness and misery, however, may suggest something more, and inquiry elicits the fact that there was some febrile illness. It may have been a month or more ago or perhaps there has been a good deal of irregular fever, which has been attributed to teething or what not. In older children also the chronic stage may show itself as a wasting disease.

For example, a wasted girl of seven years old is seen, and from her appearance supposed to be phthisical, but the temperature chart is unlike phthisis, the fever alternating with longer periods of normal temperature. The child is more cachectic than her doubtful pulmonary signs show. An examination of the urine shows large numbers of pus cells and coliform bacilli.

Acute pyelitis in older children is easily overlooked. As in the younger children, there is rarely any local symptoms or disturbances of micturition to call attention to the urine. The child is feverish, complains of headache, perhaps has a rigor, or is sick, and sometimes there is a definite pain in the abdomen which may suggest appendicitis.

For example, a child, aged 10 years, has pain in the right side of the abdomen with high fever; symptoms began suddenly, very drowsy, some headache, marked rigidity on the right side of the abdomen, appendicitis suspected, diagnosed as such, operation recommended, but the urine examined shows acidity, pus cells, and coli-form bacilli. Potassium citrate given, appendicitis gone to stay gone.

Diagnosis.—Pyelitis is mistaken for several diseases. The most common is tubercular meningitis, but the high fever and acute onset are unlike tubercular meningitis and more resemble cerebro-spinal meningitis, which it is often diagnosed. The prolonged fever without physical signs leads to the diagnosis of typhoid fever, but again the acute onset throws doubt upon the diagnosis. The sudden onset and high fever may be attributed to latent pneumonia.

These mistakes can only arise if the urine is not examined, and it is negligence not to do so. Again, a girl with some fever, headache, some pus in the urine, but found suffering with vulvo-vaginitis. Is it pyelitis or is it something else? The presence of fresh urine with bacilli found helps. The vulva discharges are due to some form of cocci.

The distinction between tubercular pyelitis and coli-pyeltis is by no means easy, especially chronic pyelitis. Tubercular affections are not likely to show sudden acute onset or severe constitutional symptoms like the coli disease and blood is often found in tubercular urine, but not very often found in coli-pyelitis.

Prognosis.—To any not familiar with the disease an infant stricken with acute pyelitis seems well nigh hopeless, but the prognosis is generally good. As a rule, under efficient treatment, recovery is not only rapid but complete. In cases where there is involvement of the kidney itself, the prognosis is, of course, bad. In the chronic cases of bacteriuria the prognosis is ultimately bad.

Pathology.—The pathological findings in the urinary tract were small in comparison to the severity of the symptoms. The reports of Prof. Ricker from microscopic examinations of the mucous membranes were usually negative and were reported mostly as normal. This includes the mucosa, submucosa the ureters and the bladder. This report of the urinary tract contrasted greatly with the findings of the kidneys themselves. In most cases he found many small abscesses under the capsule with corresponding changes in the parenchyma. These cases were suffering from pyelitis, and either died of this or other acute diseases.

Treatment.—The treatment of acute pyelitis in most cases is satisfactory. The important thing is to keep the urine constantly alkalized. The best drug found for this purpose is potassium citrate. It depends upon the proper frequency and dosage. It is useless unless given to render the urine aklaline. 5 grains given every two hours by day and every four hours by night. This dose will do up to the first year of age. The only guide to the efficiency of the dosage is the reaction of the urine, which should be kept alkaline. It is sometimes surprising what doses it takes to do this; 8 to 10 grains of the potassium citrate every two hours may be sufficient or it may take 20 grains every two hours. But there is a limitation. Large doses of 10 to 20 grains of the potassium citrate are apt to disturb digestion and set up a diarrhea which is often troublesome. When this happens bicarbonate of sodium or bicarbonate of potassium, in doses of 5 to 10 grains every two to three hours, may maintain the alkalinity brought about by the citrate. Every day or second day the urine should be examined to find if the pus cells are diminishing. The disappearce of the pus cells is an easy criterion. To disregard it may be sowing the seed of future trouble.

There are some cases where the alkali treatment fails. This sometimes occurs when the pyelitis is due to some organism other than the bacillus coli, namely, the proteus bacillus When this occurs utropin usually does good, 1.5 to 2.5 grains every four hours, for an infant from six months to one year old. Salol is also a useful drug, one grain every four hours to a child of six months old.

If in spite of all, drugs fail in obstinate cases, the pyurea and irregular temperature persist, autogenous vaccine treatment may be tried, doses from 5 million up to 8 or 10 million may be tried upon a child of six months old, and gradually increased to 15 or 20 million within one or two weeks.

Whatever treatment is used, stimulants are often necessary, especially in the acute stage. Brandy may be used 15 minims every four hours, if thought necessary. If there is any tendency to convulsions phenozone 0.5 to 1 grain may be given to a child from six months to one year old, and should be given with 2 to 3 grains of sodium bromide until all signs of the coming on convulsions are quieted.

Where tenesmus is severe, irrigation of the bladder with 3 per cent silver nitrate solution neutralized at once with normal salt solution is often followed by marked and at times with permanent relief. But whatever treatment the attending physician sees fit to pursue, it behooves him to diagnose his case thoroughly and then treat conscientiously, for on this is his standing as a medical man established.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics

Stated Meeting Held January 14th, 1915

DR. WALTER LESTER CARR, IN THE CHAIR

Anti-Mumps Inoculation.—Dr. Alfred F. Hess presented this communication in which he stated that it was well known that an attack of mumps conferred immunity on the subject. This had been the general experience and it had been his in the Hebrew Infant Asylum. During the winter of 1912-13 there was an epidemic of mumps in the institution which included one hundred cases. This winter there had been a similar epidemic of 80 cases. None of the children who had the disease in the 1912-13 epidemic had the disease during the past winter. It was evident that since the organism causing mumps had not been isolated they could have no vaccine or serum, but in view of the fact that immunity was acquired by having the disease it seemed that they might hope to confer immunity by the use of the blood of patients convalescing from the mumps The Hebrew Infant Asylum furnished a favorable opportunity for trying this experiment since they had the advantage of knowing the past history of the children with a considerable degree of accuracy, and knew just what diseases they had had. Twenty children who had not had mumps before were inoculated with the blood of convalescent children, using six to eight centimeters of the blood from the vein of the elbow of the donor and injecting it intramuscularly. These twenty children were divided into three groups; those of the first group were inoculated with the blood of patients who had just recovered and in whom there was still some swelling of the parotid; a second group were inoculated with blood from patients about ten days recovered from the disease, while in the third group blood from children who had the disease several years ago was used. The injections were made when the epidemic had reached considerable proportions. All the children were then exposed to the mumps in the mumps wards

In all of the wards in which the children were exposed mumps occurred to a considerable extent after these children were exposed, but not one of the inoculated children contracted the disease. In one ward eleven susceptible children contracted the disease while not one inoculated child did so. The same fact was shown throughout the series. The results seemed to be the same whether the children were inoculated with the blood of those recently convalescent from the disease or those who had had it several years before. Dr. Hess said he felt that the epidemic had been limited as a result of this method of inoculation and was convinced that this method was a simple preventive of mumps in an institution. Of course in choosing the convalescent donors they should be careful to exclude syphilis. The method was applicable in a family in which one child had the disease and it was desirable to protect others. As the incubation period of mumps was long, about eighteen days, the injection could be given to other children in the family with every prospect of averting the disease. The length of time during which the immunity lasted had not yet been determined, but it very likely lasted throughout the period of exposure. On the whole it seemed better to take the blood of recent convalescents rather than that of children who had had the disease several years before.

Dr. Samuel Fieldstein, of Brooklyn, asked Dr. Hess whether he had any records of the inoculated cases as having been in beds adjoining the cases that contracted mumps.

Dr. George Dow Scott asked Dr. Hess if the blood of the patients having had mumps some months or years previous was less efficacious than the blood of patients who had recently had the disease.

Dr. Walter Lester Carr asked whether the children who were inoculated developed any constitutional disturbance or whether any local reaction was observed.

Dr. Hess, replying to these questions, said that there had been no local and no constitutional reaction. If hemolysis between the blood of the patient and that of the donor occurred there might be some reaction. As to whether the blood from the more recent cases was more efficient than that from the older cases it was difficult to say but he felt inclined to believe that blood taken from a case at about the end of the disease gave the highest immunity. As to the exposure of the inoculated children, they were kept in wards with children who had the mumps and who were kept in bed while they had fever; after the fever subsided these children were up about the ward and mingled with the other children. The children played about the beds of those confined to their beds with the mumps. 'Dr. Hess thought that this method could be made use of in other infectious diseases as well as mumps where immunity was conferred by one attack of the disease. It perhaps could be applied in measles, but possibly not in so great a degree. At some future time they might learn to apply it in scarlet fever.

Clinical Distinctions between Cerebral Intoxication, Meningism, (Serous Meningitis) and Meningitis.—Dr. Henry Heiman read this paper in which he first emphasized the importance of recognizing, if possible, the distinctions between these conditions. He stated that cerebral intoxication was fairly frequent in severe infections. Pneumonia stood at the head of the list in the matter of cerebral complications, while typhoid fever, influenza, scarlet fever, acid intoxication and other diseases and conditions had a similar tendency to develop secondary meningeal symptoms. In practically all of these cases autopsy revealed no lesions of the cerebrospinal system. In distinguishing clinically between cerebral intoxication and meningitis it must be borne in mind: (1) That there was always an etiological factor to which the meningeal signs were secondary; (2) that the signs in cerebral intoxication were significant of a general cerebral irritation, while in primary meningitis there were in addition distinct focal signs; (3) that lumbar puncture was the most important and definite means of differentiating the two conditions. In intoxication the spinal fluid was sterile and clear; in meningitis bacteria would in most cases be found in the fluid either by smear or culture, and the appearance of the fluid would be changed from the normal. The cytological examination of the fluid was also significant; in the intoxication cases no variation from the normal occurred whereas in meningitis various changes were present, depending upon the type of infection, that was, whether it was meningococcal, pneumococcal, influenzal, tuberculous, etc.. When the ordinary clinical and laboratory methods were not sufficient to distinguish between the two conditions, lumbar puncture was not only justifiable, but necessary, even in the presence of acute infection, like puenmonia or typhoid fever.

Meningism was a term first proposed by Dupre at the Medical Congress at Lyons in 1894 to include all those cases clinically resembling meningitis but in which lumbar puncture revealed sterile fluid. Its causes might be classified as infectious or toxic, irritative, reflex or hysterical. In the opinion of the speaker the term meningitis merely meant a greater degree of cerebral toxemia than was found in the condition called cerebral intoxication, and differed from it only by showing evidences of increased intracranial pressure and by a symptom complex which still more resembled true meningitis. Among the most important diseases producing meningism might be mentioned auto-intoxication or acidosis, which was fairly frequently mistaken for meningitis in children. Here the differential diagnosis must be made by frequent observation and by lumbar puncture if necessary. Meningism might occur in the later stages of gastro enteritis where the symptoms might be so marked as to point to a diagnosis of tuberculous meningitis. Of the irritative causes of meningism might be mentioned head injuries, some subacute and chronic ear conditions, and operations on the cranium or upon the venous sinuses. Under the reflex causes of meningism, helminthiasis had been mentioned rather extensively by the French, but Aporti believed that these were not hysterical or psychogenic in nature, but rather toxic or infectious in origin. The points of difference between meningism and meningitis were: (a) the presence of one of the above mentioned etiological factors in meningism; (b) the transitory character of the symptoms in meningism, that was the subsidence of signs when the etiological condition improved; (c) the ophthalmoscopic findings (in meningism one rarely found any ocular changes); (d) the bacteriological and cytological findings in the cerebrospinal fluid in meningitis. This latter must be regarded as the most important differential sign. Among other conditions which might simulate meningitis were: Pachymeningitis hemorrhagica interna, which was characterized by enlargement of the head, its distinguishing feature being punctuate or striated hemorrhages in the retina, and hemorrhagic fluid on puncture of the anterior fontanelle, while the spinal fluid remained clear. The etiology of this condition was supposed to be pre-existing hemorrhagic rhinitis or diphtheritic or streptococcic origin. (2) Pachymeningitis interna luetica. (3) Encephalitis, which in infancy and early childhood could only be distinguished from acute meningitis by lumbar puncture.

Dr. L. E. LaFetra said that certain it was that without lumbar puncture a diagnosis could not be made in very many inctances. It was perhaps advisable to resort to lumbar puncture earlier and more frequently than had been brought out in the paper. The significance of the presence or absence of cerebral tache and of Kernig and Bradzinski's signs in making a differential diagnosis between true meningitis and conditions simulating it might have been emphasized. If there was any doubt one should resort to lumbar puncture to see what the spinal fluid shows. In view of the fatality of true meningitis it was advisable to make a lumbar puncture early for if one found a turbid fluid there was a good chance that it might be due to the meningococcus or to the influenza bacillus, for both of which the serum treatment was available. Where the infection was due to the pneumococcus or to the streptococcus secondary to a streptococcus infection in some other part of the body the prognosis was hopeless. In cases of severe malnutrition, meningismus might be met with and here the marked retraction of the neck, the great irritability and the hydrocephalus made the case appear to be one of meningitis. In these cases of malnutrition the fontanelle was deeply sunken, and while this was rarely true in tuberculous meningitis it was of good prognostic significance. As the child improved the fontanelle filled and the retracted neck soon came to its normal position. A distinction must also be made between poliomyelitis with symptoms simulating meningitis and true meningitis, and here the spinal fluid cell count and the globulin content and the way they changed offered a means of making a differential diagnosis.

Dr. Fenton B. Turck said he did not think that enough emphasis had been placed on the fact that in young animals and in children the bacteria passed readily into the walls of the intestinal tract; they passed through the submucosa, between and never through the cells, and became destroyed there or in the blood. While they did not form toxins within the lumen of the intestines when passing through the mucosa into the wall, they produced a distinct anaphylaxis. Dr. Turck said he had recently seen several cases that presented the symptoms of meningitis, and it was thought they had the disease, but on microscopical examination and cultures, organisms were found of the bacilli coli group, sometimes in symbiosis with cocci in the blood and the urine. In these cases it was the native bacteria, the endogenous and not the exogenous, that were at fault. Three or four cases within six weeks mistakenly diagnosed as meningitis was quite a large number, and the examination showed at once that the invasion was from the intestinal lumen. The use of vaccines in these cases offered great advantages with the administration of the deficient internal secretions, elimination of the infection from the intestines, and the use of alkalies to overcome acidosis. This system of treatment, together with the withdrawal of food, or giving only arrowroot, had been very effective.

Dr. Morris Stark said that it seemed to him that with these three conditions it was simply a question of degree. Dupre, who first discussed meningism, discussed it from the standpoint that in this condition there were no lesions, but that the symptoms were the result of irritation of the meninges, and he came to the conclusion that there was some actual change in the spinal fluid, a chemical change, or a change in the leucocytes. In the very fulminating cases the reason one found no germs might be that the patient died before pus formation had had time to take place. One should also take into consideration the difference in reaction to irritation. Different groups of children reacted differently; the spasmophiliacs were sensitive to a marked degree to meningeal irritation and then there were children who did not respond so easily. In the cases due to intoxication from the intestinal tract, the results were probably produced by bacteria in the spinal fluid, but the changes were so unimportant that they were undetected. Reaction of the neck was a very common symptom in all manner of sickness in babies, and in making a diagnosis of meningitis it became a question of the degree of retraction and the amount of force necessary to overcome it.

Dr. Royal Storrs Haynes said that in reference to serous meningitis complicating indigestion he would like to call attention to the fact that there was a type of cases in which the fontanelle was not retracted, as Dr. LeFetra had correctly indicated to be the rule, but, on the contrary, the exudate caused a distinct distention and the fontanelle was hard and without pulsation. He had seen such a case with Dr. LeFetra in which the child had been ill with gastrointestinal intoxication and showed the symptoms of meningitis. The fontanelle was full, hard and showed no pulsation. While considering the advisability of lumbar puncture the child began to improve and pulsation returned to the fontanelle. It was interesting to correlate this case with a full fontanelle and symptoms of meningitis with those cases in which the fontanelle was sunken.

The Surgical Treatment of Disease of the Stomach in Children.—Dr. Angelo L. Soresi presented this communication. He stated that the main reason why surgery on the stomach resulted in so many failures in children was that the attending physician referred the patient to the surgeon when already in a hopeless condition. Surgery should always be a last resort, but the attending physician should keep in mind the possible necessity for surgical intervention and refer the patient to the surgeon in time. In injuries of the stomach intervention should be immediate when the child was brought to the surgeon immediately after the wound was inflicted; if he was brought later the expectant treatment was better, because many wounds of the stomach in children healed spontaneously. Expectant treatment was imperative if the child was first seen many hours after the accident. In experimental work wounds of the stomach in which the stomach was cut clean through with the scissors for about the length of a centimeter, the mortality of absolute non-interference was about 30 per cent; the mortality of intervention after twenty-four hours was 80 per cent; the mortality after three hours was zero. Foreign bodies did not often cause serious trouble in the stomach for the reason that when they passed into the stomach they generally passed into the intestine and were expelled. However, they might locate themselves in the lower part of the œsophagus and require removal through the stomach. Medical treatment was absolutely powerless if the foreign body caused serious trouble, such as hemorrhage, perforation, or occlusion. Stenosis of the œsophagus near the cardia was caused by the passage of caustics or might be congenital. If the passage of sounds through the mouth could not be effected, the indications for surgical intervention were not doubtful. Stenosis of the pylorus was a condition peculiar to young children and was more common than was generally supposed. Generally it came on suddenly in well nourished children born of healthy parents. At times the symptoms in the beginning were slight but in others the symptoms were very definite and one could note the persistaltic movement of the abdomen. The loss of weight was very remarkable and rapid at the beginning, then became slow and progressive. The appearance of a tumor on the pylorus was not an absolutely reliable sign of stenosis. Stenosis of the pylorus could only be mistaken for spasm of the pylorus or some kind of intestinal obstruction. By referring to the anatomy of the stomach one could not fail in making a diagnosis. If no bismuth passed through the pylorus after three hours one could feel sure that he was dealing with a true stenosis of the pylorus. The question whether one was dealing with a real spasm of the pylorus or with a growth of the pylorus was exceedingly difficult to answer. The spasm might cause a hypertrophy of the muscular coat so that the spasm would be the real cause of the increase in the muscle. It would seem that the condition was not congenital but acquired, and that it could not be remedied by medical means although these should always be exhausted before resorting to surgery. Children stood operations poorly. Anesthesia in children was of the greatest importance and only the most expert anesthetists should administer anesthesia to children. Speed and thoroughness were absolutely essential to good results. Gastroenterostomy was the operation of choice up to the present time, but it was not a physiological operation. Dr. Soresi described an operation which he had devised to conserve the physiological relations of the stomach and duodenum. A piece of the ileum about three centimeters in length was severed from the rest of the intestine. With a seroserous suture close to the attachment of the mesentery on the side that naturally came in contact with the pylorus without twisting the pedicle, it was secured over the pylorus, half on the stomach and the other half on the duodenum; it was then cut longitudinally about two centimeters from the suture line, so that it became a large square piece, opening itself and showing the mucosa. The stomach and duodenum were also cut longitudinally, parallel with the seroserous suture line, leaving a margin of abont two centimeters as was done for the intestine. This incision was started from the duodenum and must be about six or eight millimeters longer than the length of the seroserous suture, extending therefore three or four millimeters on the stomach and duodenum. A through and through suture with catgut No. 0 was started alongside of the seroserous suture and continued all around, until the opening made in the stomach and the duodenum was closed. This suture done rapidly would check all bleeding. The seroserous suture was then continued all around and the procedure was completed. It was evident that between the stomach and duodenum there was now a large passage, lined with perfect mucosa, so that possible contractions would not affect the easy passage of the contents of the stomach into the duodenum

Animals showing the advantages of this method of operation were exhibited. They were in perfect condition one year after operation. In fact, they were in much better condition than dogs operated on at the same time with gastroenterostomy, with occlusion of the pylorus or leaving the pylorus patent. One of the essential points in surgery of the stomach was that the surgeon should never put his hand into the abdomen, and should use as little retraction as possible, because the hand of the surgeon could not be sterilized and putting it into the abdomen caused trauma and infection which resulted in adhesions. The laparotomy incision should be made about one-half a centimeter from the linea alba between the xiphoid and the umbilicus for at least five centimeters. In stenosis of the pylorus the surgeon had to make a good permanent passage between the stomach and the duodenum. The operation resorted to in these conditions was Loreta's, which consisted in stretching the pylorus with the finger. Gastroenterostomy by the method presented was better than Loreta's operation, jejunostomy or the different kinds of pyloroplasty. The gastroenterostomy should be a posterior one if possible.

Dr. Soresi gave a lantern slide demonstration of his technique.

Dr. James T. Gwathmey said the general principle had been accepted that chloroform was not an appropriate terminal anesthetic in children under nine years of age unless accompanied by oxygen, but one could initiate the anesthesia with chloroform and then continue with other anesthetics in such a way that the anesthetic was practically devoid of danger The American statistics of about a half a million cases showed that it was satisfactory to begin with essence of orange, then follow this with chloroform for the second stage and then change to warm ether vapor. By using this sequence the patient could be brought out of the anesthetic without struggling or vomiting, but if the anesthesia were indicated with others there would probably be both. With gas and oxygen the anesthesia could be continued with children of any age. The element of time must be taken into consideration, especially with children, and while the surgeon must do his work carefully and without hurry, he should not lose sight of the fact that the child should not be kept under the anesthetic longer than necessary. As a rough general rule it might be stated that children should not be kept under an anesthetic longer than one hour.

Dr. Leon T. LeWald said that with reference to the question of diagnosis he agreed that repeated examinations with the Roentgen ray offered the safest and surest way of determining between spasm and true stenosis of the pylorus. There were several ways of making this distinction, but if nothing was passing through the pylorus in from one to three hours after the administration of the bismuth meal this was abundant indication for surgical interference. Dr. LeWald said he had seen gastroenterostomies in children that were successful and the children were well nourished afterwards.

Dr. William H. Stewart said that in reference to Dr. Soresi's remarks on foreign bodies, it was well known that many foreign bodies passed safely through the digestive tract; even open safety pins had been known to pass through without giving any trouble. The only indications for inter ence were when the body swallowed occasioned clinical symptoms. In regard to the differential diagnosis between pylorospasm and true stenosis, the X-ray was undoubtedly a great help, but he questioned whether if no bismuth was found passing through the pylorus after three hours that that was sufficient evidence that one was dealing with a true stenosis. Such an X-ray finding would at least have to be verified by a number of examinations In some cases in which nothing passed the pylorus for three and one-half hours after the administration of the bismuth, a reexamination showed the bismuth passing through the pylorus. It was of particular interest that an organic stenosis might result from pylorospasm. The small but constant irritation of the spasm over a considerable period of time produced a hypertrophy of the muscular structure, and eventually stenosis.

Dr. Stewart asked Dr. Soresi if he had made any observations on the stomachs of dogs after gastroenterostomy with reference to the emptying of the stomach. In what proportion did the bismuth meal pass through the gastroenterostomy opening? It had been asserted that 95 per cent of the food ingested passed through the pylorus, while only 5 per cent passed through the gastroenterostomy opening. This had not been his experience; he thought that about 50 per cent passed through the pylorus and about the same amount through the stomach. It had been interesting to hear what the speaker had said in reference to the susceptibility of bone to infection. Some men were saying now that the death knell of Lane's plates had been sounded. He had watched Dr. Lane do his operation and the vital point in his technique was that at no time did the operator's hands come in contact with the bone.

Dr. Fenton B. Turck said that Cailli had reported (Rivista Ospedaliera) the case of a child having spasm of the intestine with obstipation which had persisted for three weeks. There was continual vomiting and all the symptoms of intestinal obstruction. An exploratory operation showed that the condition was purely spasmodic, so the wound was closed and a systematic course of treatment carried out, under which the child recovered. Some had ventured to state that a purely spasmodic condition would not last as long as three weeks, but the speaker had observed the condition to persist for a long time in spasmophyliac children, and it represented a type of fatigue, a delayed period of relaxation following contraction, which continued for a long time and was often mistaken for true stenosis. It was possible for bacteria to pass from the mother to the fetus and to lodge in the muscle fibres in the pylorus and there to set up irritation which might result in a congenital mechanical obstruction due to hypertrophy of the muscles and stenosing pylorus. One should be very careful in making a diagnosis of real obstruction, which rarely existed. Treatment directed to recovery from the fatigue of the muscle wall of the stomach and intestines gave the best results.

Dr. Soresi, in closing the discussion, said that in his paper he had insisted on repeated X-ray examinations, and stated again that in order to be certain that one was dealing with a real stenosis of the pylorus and not with a spasm, the X-ray examination should be repeated several times, and that surgical intervention should not be resorted to until all medical means had been exhausted. With reference to the emptying of the stomach after gastroenterostomy in animals, if the pylorus was patent, it could be seen with the X-ray that a great amount passed through the gastroenterostomy opening which might be due to the fact that in the passage of food from the stomach through the pylorus it has also to pass in descending to the intestine over the gastroenterostomy opening. In animals it was seen that if the pylorus was patent the dog was in perfect shape, ate and acted normally, but if the pylorus was excluded the dog got thinner, no matter what kind of food or how much food was given to make it fat. This might be explained by the fact that the digestion in the stomach of the dog was exceedingly slow, and when the pylorus was excluded and the gastroenterostomy opening was made the food passed very rapidly and digestion was not complete. In human beings this did not occur because the digestion of food in the stomach was not so slow as in animals; that was not if the food or a part of it remained in the stomach a certain time after, even if it had to pass through the gastrenterostomy opening Dr. Soresi again insisted on the avoidance of trauma through the bad practice of introducing the hands into the abdomen. He exhibited a number of specimens showing the results obtained by the reconstruction of the pylorus, and the effect of the presence of unabsorbable material in the stomach and intestine demonstrating that when such material was present the scar tissue became much thicker.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Orthopedic Surgery

Under the Charge of

JAMES K. YOUNG, M. D.

Associate Professor of Orthopedic Surgery, University of Penna.; Professor of Orthopedic Surgery Polyclinic Hospital; Clinical Professor of Orthopedic Surgery, Women's Medical College.

and

A. BRUCE GILL, M. D.

Dispensary Surgeon to the Presbyterian Hospital; Assistant Surgeon to Widener Memorial School.

Bone Tuberculosis.—By Geo. H. Sexsmith (Journal of the Med. Soc. of N. J., Mar., 1915.

The author considers together tuberculosis of bones and of joints. Whether or not this disease may be primary in bones and joints, or whether or not it is always secondary to a tuberculous focus elsewhere, has not been definitely settled. It is not hereditary, but the liability to it may possibly be inherited. More likely is it, however, that there occurs direct infection from a tuberculous relative living in the same house. Unhealthful surroundings, insufficient food, and uncleanliness, lower bodily resistance and favor infection. Therefore, this disease is more common among the poorer classes of people in our cities. The entire trend of opinion today is away from the hereditary influence and toward direct infection from without. Furthermore, the influence of traumatism as a secondary cause of infection is being more and more discredited. Certain acute infectious diseases, as measles, whooping cough, scarlet fever, and pneumonia are recognized as predisposing causes.

Tuberculous disease of bones and joints may assume one of two pathological forms, the well defined tubercle, or tuberculous infiltration. In the latter the characteristic epithelioid cells are not gathered into nodules or tubercles but run in streaks or are scattered in the tissues. The tubercle bacilli are always found in or among these cells. Tuebrculous tissue shows a tendency to undergo caseation, and it excites inflammatory changes in the surrounding tissues. The primary nodule leads to the development of other similar ones and the consequent spread of the disease.

The primary lesion may be in the bone or in the synovia of a joint. In the latter position it produces general diffuse thickening of the synovial membrane, or limited thickening, or acute miliary involvement of the membrane, a condition of hydrops, or pyarthrosis of the joint. In bone there are presented also various forms of the disease, as miliary tuberculosis, caseation, sclerosis of bone, superficial necrosis, "caries sicca," tuberculous periostitis, and tuberculous osteomyelitis of the short bones as in "spina ventosa."

In treating this disease we must consider the general health of the patient, rest and immobilization of the affected parts, the use of serums and antitoxins, and various surgical procedures.

Fractures in the Neighborhood of Joints.—By James K. Young (Am. Journal of Surg., Mar. 1915). Fractures in the neighborhood of joints are frequently referred to the orthopedic surgeon because of the deformity and disability that are often apparent after four to six weeks and that are intractable under ordinary methods of treatment.

Simple fractures about a joint are usually easily recognized by clinical and X-ray examinations. Great difficulty, however, sometimes exists in reducing the fracture and in maintaining good apposition of the fragments. Open operation must sometimes be employed. In dressing such cases the joint should always be placed in the position most favorable to usefulness if ankylosis should occur. Thus, in fractures about the elbow, with the exception of fracture of the olecranon, the arm should be flexed. Early massage and movement is invaluable.

Compound fractures are more difficult of treatment owing to the frequency of infection in these cases. Where the fracture is comminuted the smaller fragments should be removed and the larger ones flexed by wire or plate. The limb should be dressed on a suitable splint in the best position for ankylosis. Frequently, complete or partial excision of the joint will give the best possible result.

The author dwells upon the necessity of a strictly aseptic technic in operations upon joints.

After operation the joint should not be injured by passive movements as is so frequently done. Such movements should not be done early, and should be begun very gently and gradually.

A Contribution to the Study of Joint-Bodies from Within Present in Articulations, Otherwise Apparently Normal.—By Heineck (Nash. Jour. of Med. and Surg., Feb., 1915).

This article is based upon a review and study of all cases of joint-bodies originally reported in the English, French, and German medical literature from 1890 to 1913. Analysis is made only of those cases in which the diagnosis of joint-body was confirmed at the operating, dissecting, or post-mortem table. The following classes of cases are excluded: displaced semilunar cartilages or fragments thereof, extra-articular bodies even when of intra-articulate origin, foreign bodies lodged in the joint, cases in which the joint body may have been produced by an arthritis such as suppurature or gonorrheal, and cases of arthritis deformans.

The author discusses at some length, which precludes repetition here, the incidence of joint bodies as to age, sex, the articulation involved, and associated with other anomalies of the affected joint, the etiology and pathology, the symptomatology and differential diagnosis, and the treatment. The last should always be operative under rigidly aseptic conditions.

Heineck has presented in this article an excellent review of his subject which is well worth perusal.

The Inlay Bone Graft Versus Lane Plates in the Treatment of Fractures.—By Fred H. Albee (Am. Jour. of Surg., Mar., 1915).

The author employs a bone graft inlaid in the fragment as a substitute for Lane's plates in those fractures that require operative treatment. Such treatment, however, should be resorted to only when reduction and fixation cannot be accomplished by the ordinary methods of dressing fractures.

Bone inlay work can be done quickly and accurately by means of the electro-motive equipment which the author has assembled and in part devised. The electric motor with sterilizable shell and single and twin circular saws, drill and dowell are, indeed, almost necessary in these operations.

There can be no doubt that the autogenous bone graft is a reliable surgical agent, although there is still some academic discussion as to the precise role it and its constituent parts play. That it acts as a true living graft and is osteognetic in itself under certain conditions has been demonstrated by many observers.

Furthermore, a graft will adapt itself to the function which it is called upon to perform. It increases in size and strength and shapes itself according to the functional demand placed upon it.

A metallic body, such as a Lane's plate, tends to cause bone atrophy; the bone graft stimulates osteogenesis. In old cases of nonunion the ends of the fragments of bone are already sclerotic, and fixation by a metal plate will not cause reunion to take place. But a bone graft that spans the sclerotic area and penetrates into good bone at each end will become united to the fragments and will proliferate and grow to a size necessary to the proper function of the bone. In the third place, the plating operation often leads to infection that requires the removal of the plate, while the bone graft is capable of resisting mild infections.

The inlay graft possesses a number of advantages over the intramedullary graft in the ease and accuracy of its application and in its efficiency in all positions, even when near a joint.

Albee describes in detail his technic of bone transplantation and cites numerous clinical cases to demonstrate the truth of his theories.

Miscellaneous Abstracts

Non-Vaccination and Virulent Smallpox.—The weekly report of the United States Public Health Service for Feb. 13 states that there has recently been an outbreak of virulent smallpox at Springdale, Washington County, Arkansas. On Feb. 11 there had been six cases, of which four had terminated fatally. The infection was introduced by a person from Tampico, Mexico.

"These cases and the origin of the infection illustrate the manner in which virulent outbreaks of smallpox in this country have started during recent years. For several years a strain of mild smallpox has existed throughout practically all parts of the country. In no instance, however, has this mild infection been authentically shown to have been the cause of a virulent outbreak. All virulent outbreaks in which the source of infection has been traced have had their origin in some existing virulent outbreak in this country or have been imported.

"The manner in which the strain of mild smallpox existing in this country remains true to type is illustrated by an outbreak which occurred in New Zealand as the result of infection imported from the United States."

A letter from the district health officer at Auckland on Jan. 7 reported this epidemic as follows:

"We have recently undergone in New Zealand a fairly widespread epidemic of the mild type which seems to have been prevalent in America during the last twelve years. It appeared simultaneously in Australia, where, among nearly 300 cases no deaths have occurred. In our case the disease has been almost entirely confined to the Maori race, who are peculiarly susceptible to infectious diseases, more especially of the pustular type. The cases among these natives were on the whole much more severe than those among Europeans. In some cases the disease had all the appearance of confluent smallpox, and in a small percentage even proved fatal, yet other natives infected from such severe cases might take it in the usual mild form, and there was no evidence that it worked up in virulence permanently to the normal degree of severity. The majority of the cases even in natives very few of whom were vaccinated, were more like chicken pox so far as severity was concerned.

"We were able to trace the introduction into New Zealand to a party of persons who came from Utah by way of Vancouver in the steamer Zealandia, landing here on April 8. One of this party had a pustular disease of mild type while on board the steamer. In all, some 2,000 cases occurred, but owing to the fact that the natives are a wandering people without definite places of abode, and do not notify their cases, and rarely send for an European doctor, accurate statistics are impossible to obtain."—Boston Med. Surg. Journal.

Alcoholism in Children.—Dr. C. Ortali, in Gagetta degli Ospedali, Milan, discusses both the injury from alcoholism in the parents and that from acquired alcoholism in children. He reiterates that a child procreated while one or both of the parents is drunk—even though the parents otherwise are only moderate drinkers—is usually below par in some way, mentally or physically, and refers to the reputation for physical and mental degeneracy borne by "holiday children." Even 1 per cent of ethyl alcohol in the water will check the development of the embryo: 2 per cent will cause development of deformities and the growth is much retarded, while with 4 per cent there is no growth at all. Alcohol taken as a beverage passes into the ovaries, testicles and prostate and into their secretions. Both ovum and spermatozoa suffer from the injurious effect from the alcohol, which is preeminently a poison for protoplasm. The statistics of criminology show plainly the influence of alcoholism in the parents as a deficiency in the moral sense is one of the commonest manifestations of an inherited taint from alcoholism. The offspring are usually liable to abuse of alcohol as they grow up; he has investigated this in a number of cases and found a family history of alcoholism in habitual drunkards even although they were brought up entirely remote from their parents, so that the influence of example and training was out of the question. He reports a case of multiple cerebrospinal sclerosis in a young man whose parents had been hard drinkers, and for which no other cause could be assigned. The growth is frequently stunted in districts where there is much abuse of alcohol and the children of persons addicted to alcohol are peculiarly susceptible to tuberculosis. He also cites instances of the wasting away of infants nursing drinking mothers.

Acquired alcoholism in children causes more intense intoxication than in adults and the symptoms are manifestly more predominantly in the nervous system; infants are liable to have convulsions but without fever or bowel trouble. When the alcoholism is chronic, the child is restless, grows very slowly and is liable to have insomnia, strabismus and gastro-intestinal disturbances, finally wasting away completely. In older children the intoxication resembles more that in adults, but there may also be epileptiform convulsions, actual collapse, delirium or maniacal excitement. Intoxication from wine is characterized by gaiety and excitement, while brandy etc., bring depression and torpor. In intoxication from liquers, absinthe, etc., the plantar reflexes and perception of pain are exaggerated, while they are deadened with ordinary intoxication.—N. J. State Journal.

The Newborn Babe: How to Care for It.—"Inanition fever of the newborn" is rather a unique expression, I am sure. The needs or wants of a child soon after birth are the same as later on in life, only a little more difficult to interpret. The cry, the only language of the newborn, is the same for all of its wants, whether hungry, thirsty or uncomfortable from heat, cold, moisture or what not. I instruct my nurses that the cry of the newborn indicates one of three things, hunger, thirst, or want of bodily attention. A baby will cry for water as well as for nourishment.

I recall a case which occurred several years ago—it was on the fourth day of the puerperium; the baby had been crying a few hours, and would not be satisfied with its nourishment, which was plenty, or by any manner of bodily attention. On my arrival I asked for a cup of hot water and a teaspoon. I at once began administering the hot water freely to the child, giving about an ounce in all. I then placed the baby in bed and he went to sleep almost immediately, and slept for three hours without awakening. This was all the colic medicine this baby ever received.

I have observed that a large infant requires nourishment soon after birth, more so than a smaller child. Why, I do not know. I advise a half teaspoonful of cream to four teaspoonfuls of boiled water given every few hours until the mother secretes a sufficient amount of milk for her child. A baby should be placed to the mother's breast every four hours, until the milk appears, then every two hours.

A child that is not doped with anodynes or soothing syrup will always cry when its napkin is soiled, and if this is changed at once it will never become chafed. A napkin that is soiled with urine only should always be washed before being used again. If clean napkins are always used, and they are removed as soon as soiled, no dusting-powders will be required, as there will be no chafing.

An infant whose parents are healthy should be born well and does not require medication if properly cared for.

On entering the room of a crying infant which is less than a week old, I always insert my little finger in its mouth. It usually begins sucking the finger at once. In a few instances I have found the mouth very warm, and then I took the rectal temperature and found the temperature to register 104 degrees to 105 degrees F. I have attributed this condition to congestion of some internal organ or organs, resulting probably from some fault in its first bath, which was too prolonged, room too cold or some other condition in which the child became chilled. The first bath should be a grease (usually lard) bath, given under cover or exposing only a portion of the body at a time. Then use a dry cloth to remove the excess of grease. In my early practice, I had two apparently healthy children who died when less than a week old. I did not take their temperatures with either finger or thermometer, but in each case the parents claimed the child had coughed a little. So, I concluded, it was congestion of the lungs.

When I find the infant's mouth hot, I take its rectal temperature, which conforms to the finger-temperature. I recall three cases, ages three, four and five days respectively, in which the temperature was 104 degrees F., or more. I used quinine inunctions, and all responded rapidly to this treatment.

In my private hospital, I have 1-ounce bottles with rubber nipples, and each infant gets its water to drink as regularly as its nourishment. Do not forget the hot water, which is the best anodyne for an infant.

Doctor Douglas asks: "Have any of you ever tried treating the mother?" Yes; and generally with good results, except in a few nervous and excitable mothers. I will relate one case.

This woman, mother of seven, had nursed her first and second child, and the third child a few weeks. In the others, the milk would leave as soon as she left the bed. This mother was advised to take—and she did—oatmeal gruel, hot milk (not boiled), or cocoa made with milk, to be taken between meals and at bedtime. She was forbidden to drink coffee or any alcoholic drinks. Her seventh child she nursed until it was nearly a year old, and a fine specimen of a child it was, too.

Some physicians advise nursing mothers to drink porter. This may increase the quantity, but, I am sure, not the quality. Too many babies are bottle-fed and too few mothers are advised as to the proper kind of nourishment. Both the food and drink of the nursing mother should be nourishing, but not stimulating, alcoholic preparations especially being avoided.—E. N. Ritter, M.D., Williamsport, Pa., in Clin. Med.

Intussusception in a Baby.—Reported by Dr. D. N. Eisendrath, in a paper in the Illinois Med. Jour.

Baby, aged three months, breast-fed for first four weeks of life, then condensed and bottle-fed milk, was taken suddenly ill, October 11, 1914. Parents noticed child became very pale and vomited and that they were unable to obtain a bowel movement, but the child passed a bloody mucus. All efforts to secure a bowel movement were unavailing and child was brought to hospital at beginning of third day of illness. Upon examination child appeared to be in collapse. There was some rigidity over pubes and through the rectum one could feel the apex of an intussusception. The abdomen was opened in the median line and there presented itself a typical intussusception of the ileocecal variety. The efforts at reduction were without avail. The serous coat of the colon tore when efforts at traction were made. The only choice was between resection and the establishment of an artificial anus. The ileum above the obstetrical area was greatly distended. The terminal ileum, appendix, the cecum and ascending colon were involved. A lateral anastomosis was performed between the ileum and the sigmoid after resecting the entire intussuscepted portion. For a number of days after the operation the child had many bowel movements, and every day seemed to be losing ground rapidly. On the sixth day a slight infection of the superficial portion of the wound was discovered and while changing the dressing on the wound on the eighth day a partial evisceration occurred. The protruding coils of ileum were held within the abdomen by strips of adhesive plaster and the skin has healed over the intestine with a formation of a ventral hernia. Thanks to the co-operation and advice of our medical colleagues in the Sarah Morris Hospital, especially Dr. Ernest Lackner, we are pleased to report an apparently complete recovery with continued gain in weight. The mortality of resection for intussusception up to the age of one year has been nearly 100 per cent., so this case is an unusual one.

Abscess of Liver in Child.—Reported by Dr. D. N. Eisendrath, Chicago, in the Illinois Med. Journal.

Girl, aged 2½ years, was admitted with a history of having pain in the abdomen for two weeks. There was a marked rise in temperature every evening, but no chills. Four days before her admission the pain, which had been epigastric, became localized in the right upper quadrant. She was sent to the hospital with the diagnosis of acute appendicitis. She never had any similar attacks, but had been operated upon for mastoids seven months before the onset of the present trouble. At that time there were no symptoms of pyemia, but an incision was made over the mastoid, which evacuated considerable pus. Upon admission her temperature was 101, pulse 144, white blood count 22,000, urine negative. Examination of the abdomen showed that it was not distended, but soft everywhere with the exception of the iliocostal space, where there was distinct rigidity and tenderness. The diagnosis before operation was appendicitis in a retrocecal appendix. Upon opening the abdomen through a right para-rectal incision the cecum and appendix showed no inflammatory changes, the appendix being free and pointing downward and inward. A mass was now felt in the right subphrenic space covered by acutely inflamed omentum which could easily be separated from it. On the convex surface of the right lobe of the liver in the auxiliary line was a mass which bulged into the subphrenic space and from which thick, yellowish pus escaped upon separation of the omentum. It was evidently a large abscess with multiple foci extending through the entire thickness of the right lobe. After drainage of this abscess patient made an uneventful recovery. Cultures taken from the pus at the time of operation showed the staphylococcus aureus alone. Abscess of the liver in children is very rare. The chief point in interest is, we think, the etiology in this case and it is our opinion it was secondary to the mastoid infection which had occurred seven months before and had remained latent until it had reached the surface of the liver.—N. J. State Journal.

Casein in Infant Feeding.—A. W. Bosworth and H. I. Bowditch (Amer. Jour. Dis. Child., 1914, viii, 120) describe a method for preparing dry powdered paracasein for use in infant feeding. It is shown that this paracasein is very easily digested and absorbed, and judging from the elimination of creatinin and creatin, it seems possible to maintain normal nitrogen metabolism by its use in infant feeding. It is shown that disturbances (fever, toxic symptoms, etc.) do not result from feeding this paracasein in exceptionally large quantities for seven days, even if fed with only the small amount of whey carried in 68 c., of 32 per cent cream. The method of preparation is as folfows: Fat-free milk is curdled by the addition of rennin and when the curd has become so firm that it will make a clean break when the finger is thrust diagonally into it and then lifted up, divide it into small pieces, remove the whey and wash several times with water. If the curd is obtained from a dairy, or for any reason becomes matted together, it must be broken up and then passed through a meat chopper. The finely divided curd is now placed in a large vessel such as a cheese vat or a clean wash tub, and to it is added 5 volumes of water for every volume of milk used to produce the curd. The curd is now dissolved by adding about 10 c.c. of concentrated ammonia water for each quart of milk used. More or less continuous agitation will be necessary. After complete solution the paracasein is precipitated in the following manner: Take 2.5 c.c. of glacial acetic acid for every quart of milk used and dilute it with 25 volumes of water. Add this diluted acid to the solution of paracasein, a few cubic centimeters at a time, and with constant agitation. This will precipitate the paracasein. An excess of acid will redissolve the precipiated paracasein which should separate out as a large flocculent precipitate quickly settling to the bottom of the vessel. If a very fine precipitate is formed, which does not settle rapidly, it is an insoluble calcium salt of paracasein and the addition of a little more acid will change it to the desired form, free paracasein. More or less acid than the amount specified may be required to give the proper precipitate, depending on the condition and age of both the milk and the curd, and on the amount of ammonia used to dissolve the curd. After the paracasein has settled and the supernatant liquid has been removed, it is washed several times with water and then dissolved, using the same volume of water as before, but using caution at this point so that an excess of ammonia is not added. After complete solution the paracasein is again precipitated with dilute acetic acid and washed as before. In order to secure practically ash-free paracasein it will be necessary to make six or seven precipitations. Two precipitations, if properly made, will give a fairly good product. After the final precipitation and washing the paracasein is placed in a linen bag and allowed to drain for two hours. It is then transferred to a mortar and triturated with 95 per cent alcohol. After being allowed to settle, decant off the alcohol and again triturate with a fresh portion of alcohol, repeating two or three times. The dehydration is completed by allowing the paracasein to remain in contact with a large volume of 95 per cent alcohol for an hour or two. This alcohol is removed by decantation and filtering through the linen bag and if desired the bag and its contents may be placed in a press to remove most of the remaining alcohol. The preparation is now made to pass through a 20-mesh seive and finally dried at a temperature between 80 and 90 degrees C. With a proper care as to technic the final product will be fine powder. If a powder is not obtained it can be secured by grinding in a coffee mill. If grinding is necessary the material should be placed in the drying oven again in order to remove any alcohol which might be held inside the larger particles.—Amer. Jour. Dis. Women and Child.

Atrophy in Infants.—A. Lasage (Jour. de med. de Paris, Nr. 28, 1914) describes zones of hyperesthesia that are found in various forms of atrophy in infants. These occur when feeding is not suitable, and indicate a change of foods. He describes two forms of atrophy, the simple, and the spasmodic, aside from atrophy caused by tuberculosis or syphilis. In simple atrophy there is a wasting of the muscular masses, which are flaccid. There may or may not be atrophy of the bones or slow ossification: craniobates may result, and an abnormally open fontanelle. The cause of simple atrophy is hereditary, the parents having had obesity, albuminura, diabetes, tuberculosis, consanguinity, physiological misery, polynatality, etc. Such atrophy may be rachitic. The contrasting form is the spastic, in which there is contracture of the muscles of the thighs, the hips and knees being flexed and incapable of being extended. This may be congenital in premature debility and accompanied by a general fibrosis. Atrophy is early and severe. The principal cause of this form of spasmodic atrophy is alcoholism in the parents. In acquired spasmodic atrophy there is spasm of many muscles, but not of a tetanic character. It is not localized in the larynx or extremeties. It appears in children insufficiently breast-fed, and is the spasm of inanition. There is a spasm of the sufficiently breast-fed, occurring especially in children of arthritic mothers or those having hepatic troubles. The treatment for all these forms of atrophy is a change of diet such as is appropriate to each given case, and will bring about a return of food nutrition.—Amer. Jour. Dis. of Women and Child.

Treatment of Infantile Paralysis.—By William MacKenzie (Brit. Med. Jour.). The pathology is a lesion mainly of the anterior horn cells of the spinal cord; with the conclusions based on this pathology the author is in almost complete disagreement. He contends that the cells are not irreparably damaged in many cases. Little attention has been given to the muscles secondarily affected, yet the muscles are biologically antecedent to the nerve tissue which governs them, and through them the restoration of the nerve tissues should be undertaken. The usual method of testing the involved muscle or muscles is too severe to lead to any useful conclusions and is wrong in principle. Instead of condemning a muscle as totally paralyzed because it is incapable of performing any work when tested at the greatest possible disadvantage to itself, one should carefully determine its residual capacity by testing it in its zero position. The zero position is that which corresponds to a position of the part into which it would normally be brought by the maximum contraction of the normal muscle or, in other words, the position of greatest relaxation of the damaged muscle. This position is to be secured by passive movement. In this position it will usually be found that even the most damaged muscle is still capable of contracting, although possibly very slightly. The treatment should then be based on these biological facts and should proceed as follows. During the acute stage of the disease the affected part should be maintained constantly in the zero position, both to prevent overstretching of the damaged muscles and contraction of the unaffected opponents. When the acute stage has passed the reeducation of the affected muscle and its controlling damaged nerve cells should be undertaken and pursued unremittingly for a long period of time. This reeducation should begin by encouraging voluntary contraction of the muscle in its zero position, very gradually encouraging its development so that it becomes able to move the extremity from a position more and more removed from zero. Finally this will lead to almost, if not quite complete restoration of the function and strength of the most severely damaged muscles and cells. In old cases certain surgical measures may be needed to free the muscles from mechanical interference, but usually surgical measures should not be practised, particurlarly those of nerve or muscle grafting.

Infantile Diarrhea.—Clock (Jour. A. M. A., July 19, 1913) summarizes the result of his treatment as follows:

(1) Gain in weight, in spite of the number of stools.
(2) The rapid change in the color of the stools to yellow.
(3) The rapid subsidence of fever.

(4) Absence of mucus and blood from the stools at the end of 48 hours.

(5) The fact that the hygienic surroundings of the patients and the degree of intelligence of the mothers had no influence on the results.

(6) A starvation diet, accompanied by purgation, is productive of loss of weight and strength, and serves to prolong the course of the disease; and further such a proceedure can no longer be advanced as a rational method of treating infantile diarrhea.

(7) The digestive powers in infantils intestinal conditions, even when associated with fever, are not so impaired as to prevent the digestion and asimilation of a milk diet. This fact is corroborated in typhoid where the high caloric diet, in contract to the starvation diet, has reduced the mortality to a remarkable degree. Moreover, the cases herein recorded, prove the value and rationale of continuing a milk diet in infantile intestinal conditions, as illustrated and emphasized in the diagram of weights.

(8) In severe cases best results are obtained by administering a large number of the tablets during the first two or three days of the treatment. As many as forty-two bulgaria tablets in 24 houre have been given to very young babies without untoward effect.

(9) The implantation method of treatment has progressed beyond the experimental stage and the results of its use can no longer be questioned or disputed. This treatment has been proved of practical, clinical, and scientific value, and its simplicity should appeal to every practitioner.

(10) In order to secure the best results, in using the implantation treatment a pure culture of the true B. lactis bulgaricus must be employed; otherwise disappointment will follow.

The "Jaw-winking Phenomenon."—More than seventy cases of associated movements of the jaw and upper eyelid have been recorded. To these E. A. Cockayne (Brit. Jour. Child. Dis., 1914, xi, 352) adds one in a baby first seen at six months of age. When she was about a month old, it was seen that the right eyelid went up and down as the baby sucked at the breast. There is a slight ptosis of the right upper lid. As far as one can tell in so young a baby, voluntary movement of the levator is good, and also of the other ocular muscles. The pupils are equal and react to light; there is no facial asymmetry, and no difference in size of the tarsal plates. As the baby sucks the right lid is raised synchronously with the movements of the jaw so that a little sclerotic is shown each time above the right cornea. As the jaw is moved away from the side of the lesion, as in grinding the teeth, the lid is raised. An almost imperceptible lateral movement is sufficient. The left lid is not moved, and the right eye itself remains stationary. Slight sucking movements produce no movement of the lid. When the baby yawns or laughs the lid is retracted to an extreme degree and shows a large extent of sclerotic. The movements are diminishing in frequency and in extent. There is no history of a similar condition or of ptosis in the family. Reviewing the other reported cases, the writer says the condition is evidently, to a certain extent, familial and hereditary, as one would expect, since it is probably merely a special form of congenital ptosis or ophthalmoplegia externa, both of which are, in certain instances, familial, and in others very strongly hereditary.

PEDIATRICS

Vol. XXVII JUNE, 1915 No. 6

EDITORIAL

INTESTINAL AFFECTIONS OF CHILDREN IN HOT WEATHER

The season is close approaching when infants and children suffer from infections coincident with the coming of hot weather. In cities the sickness and mortality rate among the young are vastly increased by the effects of a high temperature, and these rates increase pari passu with overcrowding. Dirt, overcrowding, lack of ventilation and improper food are perhaps mainly responsible for these conditions. When infants are fed with other food than maternal milk, they will not thrive as they would if they are fed, as poor children are most frequently fed, with food that is neither suitable nor nutritious and exist in an unsanitary environment, there is no room for wonder that they die like flies and when they do survive, it is certainly the case of the survival of the fittest. It seems, on the face of it, that hot weather prejudicially affects young children, more on account of the effects of temperature on food than from any other cause. Overfeeding in hot weather is a fruitful cause of infant sickness and mortality.

Finkelstein, Deutsch Med. Woch., 1909, No. 32, pp. 1375, has pointed out that among the consequences of overfeeding summer diarrhea is not the least important. Although it cannot be denied that direct and indirect infection play important parts in the determination of such epidemics, nevertheless, the belief is gaining ground that autogenous infection as a possible source of danger is daily increasing.

Pritchard has drawn attention to the fact that in very hot weather the dangers for slum children from overfeeding are greater as compared with the dangers at other seasons of the year, and as compared with the dangers which threaten better-class infants, largely for the reason that the inside temperature of small houses and tenements has been proved to be disproportionately high as compared with that of larger houses. In hot weather all the physiological mechanisms for counteracting excessive feeding are brought into play. Thus the infant loses appetite, digests its food more slowly, absorbs it less freely, and tends to reject it both by vomiting and diarrhoea. Unfortunately, however, in hot weather infants become thirsty and require large quantities of fluids to compensate for the water lost by evaporation and sweating, and thus nature's provisions against overfeeding are often inefficacious. In bottle feeding the thirst is a source of danger, because to obtain sufficient fluid infants drain their bottles dry and appear hungry at the end of a meal. In breast feeding the danger is less because by a merciful intervention of Providence, the milk of the mother becomes more watery.

From every point of view then, and in hot weather especially, it is essential to the well being of the infant that it should be fed at the breast. In tenement houses, there are no facilities for keeping milk clean, even if it be procured clean, which is seldom the case, neither are there facilities in hot weather for keeping milk at a proper temperature, it becomes contaminated and its nutritive properties seriously injured by the heat, and in place of being a sustaining food, it is changed to a menace, and is one of the principal causes of the intestinal disorders of infants which is characteristic of the hot weather. Moreover, if instead of cow's milk, condenced milk or one or other of the various infants' foods is given, the little one is not nourished in the same degree as if it were fed at the breast. Therefore, it appears obvious that the direct effects of heat are very largely responsible for the intestinal affections which afflict young children during the torrid period. But the direct effects of hot weather also play a marked role in the causation of the summer maladies of the young. Liefman Dent. Med. Woch., 1913, p. 1729, brings up the relation of heat to infant mortality. That heat in itself by its action on the child is a more important factor than its action on the milk, he considers is shown by his statistics concerning heat and mortality. During April, 1913, there were a few days of very warm weather and the infant mortality all over Berlin at once increased markedly, absolutely independent of the milk supply and without any pathogenic organism being discovered. He then reviews the statistics for the preceding years and finds that many times during Spring when the weather has suddenly become warmer that infant mortality is immediately increased. He believes that an important factor is that in this season the houses are not heated and the difficulty of adjusting the temperature of the home to the outside makes the child particularly susceptible. The peculiar thing is that boys are affected much more often than girls.

Rietschel, Jahr. b. fur Kinderh., Sept., 1913, maintains that outside from its indirect effect in spoiling milk, the high temperature in summer has a direct effect on the child's health. This may be acute, manifesting itself in coma, cramps, fever, diarrhea, and vomiting or it may be chronic, lowering the resistance and bring about various changes in the organism, such as reducing the fermentative processes in the intestine, affecting the intestinal flora, changing the water content by increased perspiration, thus increasing the danger of skin and other infections, there is likewise danger of overfeeding on account of increased thirst. Clinically we get all kinds of pictures, from acute intoxication to chronic summer diarrhea, with or without infection. To be sure, poverty, lack of fresh air, sunlight and proper care are factors in the production of these diseases, but all these causes exist in winter also, and the excess of summer over the winter mortality, according to Rietschel, is to be attributed solely to the effect of heat which aggravates all the other disease producing agents. As a matter of fact there is no doubt that the direct and indirect effects of heat are responsible for the serious and slight ailments to which young children are liable in hot weather. The indirect are probably greater than the direct effects. Food is the main cause of infant sickness and mortality in the summer and if infants were fed on mother's milk this mortality would be obviated. Poor mothers need education as to the best way in which to feed, care for, and bring up their children.

SUMMER CARE OF FRAIL CHILDREN

During the school period they are kept busy with their mental development and yet some awakening is now to be noticed among teachers as to the needs of physical improvements which should progress pari passu. The causes of frailty should be carefully estimated by the physician, and measures adopted to fit varying requirements. Some are inherited and some acquired. and others are both. It is to be hoped that the science of physiology, to which we must chiefly look, will soon throw practical light on the problem of detecting and removing constitutional faults in young infants. Already much has been shadowed forth. Babyhood is certainly not merely a time to be spent in eating and sleeping, though that is of the first importance. The physician must be better taught to note, and be industrious in observing the earliest evidences of developmental errors. Through the vasomotor mechanism many, if not most of these defects can be corrected, which if ignored may prove the foundation of serious organic limitations. Treatment has need to consist of much more than an abiding faith in Providence plus compatible environment and proper supplies of food: it must reckon with mechanical stimulation of circulation and the readjustment of organic blood supply. For older children the question of particularized attention to hygiene must be met for each, and the principles require more than mere routine consideration. When the heart is below par in force and regularity, and exertion is followed by evidences of arythmia. pallor and dyspnea, we must ascertain the causes, which may be due more to an undeveloped segment of the cord than to feeble musculature or peripheral disturbance, toxemic or other. Dullness, sloth or apathy may be due to headaches from eye-strain or earaches, or to adenoid growths in the pharynx. or intestinal derangements, liver impairment. and the like, again dependent upon vasomotor incompetency, and more or less removable. Vague derangements of function may evidence early infection from tuberculosis or syphilis or nutritional diseases. as rickets or scurvy. Always, that infant or child who continues to manifest a low degree of vitality and slackness in play, deserves our tenderest care and most diligent investigation. The first safeguard must be to defend it from fussy parental experimentation and spasmodic over-attention. Quiet is the paramount requisite. Next is open-air life—and this does not mean drives and excursions—merely exposure, under reasonable precautions, to sun and light and air. The light of the sun is of first importance, but in certain weather this may be too severe, and the light not directly from the sun is of the greatest value, and for most of the day while awake. During sleep, relative darkness is admissible.

DISTURBANCES OF NUTRITION IN CHILDHOOD

In children lack of vigor, as a rule, indicates a disturbance of nutrition in the segments of the cord whence arises the vascular innervation to the parts or organs most below par. It is of importance to determine accurately which organs are impaired in activity, and supply appropriate treatment which can often be best applied mechanically to the spinal areas through which these can be reached. If the limbs or the heart or the digestive tract are at fault, prompt attention to these will go far toward restoring a balance of vigor to the whole organism. Happily, there are few complications to be met, or old lesions to be reckoned with, in the young. It is unusual to find evidence of antecedent genito-urinary disorders unless infectious diseases have damaged the kidneys. Again, the ductless glands are rarely disordered seriously, although lack of development of these important sources of vital secretions may exist and the organism may fail to be supplied with the regulative principles by which the function of symmetric oxygenation is maintained. If so, it is vain to expect much improvement by change of air and scene without adopting local measures to induce thorough blood supply to the defective parts. If the limbs are weak, or the skeletal muscles fail to maintain symmetry or alertness of poise, it will soon become ineradicable. The question is: Can these conditions be successfully met and overcome? In my opinion, it is possible to accomplish this in infancy, though the departure from the normal is not then so readily noted until in later years, when through comparisons with normal activities for the age and size, we can determine their nature and extent. Wherever the physician has full access to the nursery, he should make regular and full inspection of the exposed surface of the whole body, and not wait till ailments bring to his attention alterations in structire. A careful examination of the back will give the practiced eye and hand much information. The muscular tonus, or nutrition, the consistence and quality of the tissues in the region supplied by the posterior primary division of the spinal nerves and their analogues in other regions, should make much clear. The hygienic measures which should supplement mechanical treatment consist, in the order of their importance, of the following points. Abundant quiet, no over-zealously supplied amusements, but good climatic conditions and opportunities for slow observation of natural objects. Next, suitable food supply, which again is best taken alone or with the nurse and possibly other children; not with the adult members of the family, and never at a large hotel table, at least until strength is restored in sufficient amount to have enough to waste. Light and air at all times should be too much, rather than too little, though the attempts at hardening the constitution by exposure must be of the slowest and most cautious. Clothing should be rather too little than too much. If quick temperature changes occur they must be met wisely, and especially if the legs are bare, these should receive prompt covering as cold approaches. While in action the less garments which burden the child the better. No clothes should be worn which require to be saved from dirt and dust. The feet should be freely aired by frequent changing of the footgear, and canvas or other permeable material is far better in summer than leather, and to go barefoot at time is of real value. The care of the skin is of great importance, and here much bathing is not as good as plenty of friction. If the skin be, as often happens in frail children, dry and harsh, the use of innunctions of coco butter, olive oil or refined lard oil makes for much good. When overheated by exertion it is of the greatest importance to loosen the clothing and rub the back dry. If the underwear is wet a change is needed.

OUTDOOR EXERCISE AND MOTOR TRAINING FOR THE YOUNGSTER

Nothing can surpass in value opportunities to work in a garden, to dig and delve in the earth, especially where the stimulus is added of watching the progress of growing plants which are the private property of the child. Full freedom should be allowed the child to sit and roll in the wholesome earth unless dampness is excessive. If sleep or weariness overcomes the child, the attendant should have at hand a thick rug or blanket on which it may lie to rest and drowse. A bit of woodland, however small, is almost equally good, or the sands of the shore where forts and other mimic structures can be built, is excellent. If there be enough of spontaneous energy to do this work industriously and to use the limbs with accuracy, all is well, but if not—and it is too often so—there comes a most important consideration, and that is motor education. It is true that a perfectly healthy child, abounding in normal impulses, can assuredly be trusted to follow healthy instinctive inclinations, and, given adequate opportunity and wholesome environment, will progress steadily into symmetrical adultism. But how many of our dearest and closest are so equipped primarily? The question is: How many adults of our family and friends are models of physical perfection? Clearly, motor training is of importance to each and every child. As John Fiske has pointed out most forcefully, the very length of babyhood and the slowness of human development is our highest prerogative, leading to perfection and specialization. Waiving argument, then, let me urge the paramount importance of early and scientifically correct motor education from the cradle to the grave. For the frail children this is especially important, because in them spontaneous impulses may leave much to be desired. Also, the motor machinery may be more or less handicapped in countless directions, and demand judicious direction and encouragement. Nothing is so unfortunate as a stupid caretaker. The valuable time of plasticity, which rapidly lessens, must be utilized. A healthy nurse of good simple judgment is not so hard to find. A parent ought to be able to supplement the motor education wisely. Faults of co-ordination are easily induced by organic limitations, as of bad eyes or weak asymmetric muscles, and suddenly it may be found that deformities are being established most difficult to overcome. To detail how these conditions can be met would warrant long teaching, and while there is endless rubbish extant written about physicial training, from the midst of these florid articles sound principles can yet be learned. It is well worth the attention of physicians and parents. The summer affords the best time for parents to fulfill this duty, for they are often then at relative leisure, and no single item of betterment can be indicated more likely to repay their thought and effort.

PEDIATRICS

ORIGINAL ARTICLES

ESOPHAGEAL STENOSIS DUE TO TYPHOID FEVER: REPORT OF TWO CASES*

BY H. HORACE GRANT, A.M., M.D.
Louisville, Ky.

Case 1.—A boy, thirteen years of age, gave the history of having had typhoid fever two months ago. He had a severe attack, so the family physician tells me, and at one time quite a considerable hemorrhage occurred from his mouth. There was frequent vomiting and other evidences indicative of esophageal obstruction.

About three weeks after recovering from typhoid fever he first noted difficulty in swallowing solid food. This gradually increased until no solids could be taken, and he was fed entirely upon liquids. For two weeks before I saw him, practically nothing could be gotten through the esophagus into the stomach. Several efforts had been made to pass a bougie, partly with the view of exploration, and partly to dilate the esophagus; but they were never certain that the instrument entered the stomach. The physician thought, however, that a filiform bougie passed into the stomach, but the probability is that the instrument simply doubled upon itself, although there appeared to be an opening through which the patient could occasionally swallow a small quantity of water.

I first saw the patient a week ago in Shelbyville, Ky. He was in the hospital there, and had become so markedly emaciated and showed such evidence of exhaustion, that immediate gastrostomy seemed imperative as a life-saving measure. The patient was brought to Louisville, where radiography showed the site of constriction near the cricoid cartilage, which is the most common location of esophageal stenosis, and I hoped that with the esophagoscope it would be possible to dilate the stenosed area and thus avoid gastrostomy. An effort was made that afternoon to introduce the esophagoscope through the stricture and Dr. Gaylord C. Hall, who made the attempt, thought he succeeded in doing so. At any rate, the instrument was inserted some distance beyond the site of stenosis as shown by the X-ray, although it evidently did not enter the stomach. He then introduced a small wire probe wrapped with cotton which it was thought reached the stomach, as our measurements showed the lower end at about the esophago-gastric orifice; but as nothing else could be passed through the stenosis, a gastrostomy was performed. At the preliminary operation the stomach was simply brought into the incision and anchored. The next day the stomach was opened and a tube inserted. Since then the patient has been nourished through this tube, and has greatly improved. While he is unable to walk, he can roll himself about the hospital in a chair. He takes soft boiled eggs, water, milk, etc., through the tube; chews meat and deposits it into the funnel attached to the tube, and thus gets the enjoyment of mastication. He takes water, milk, and other fluids into his mouth and then "spits" them into the funnel, and practically has no thirst now.

---

*Clinical Report before the West End Medical Society, of Louisville, Kentucky.

This patient was about to starve when brought to Louisville His pulse was 140 per minute after our efforts at esophagoscopy and before the stomach was opened. His pulse became so erratic that it was at first thought serious esophageal injury had been inflicted by our instrumentation, or that there might be some inflammatory mediastinal lesion. However, he is now in a satisfactory physical condition. He can swallow milk and soft food. No effort has yet been made to dilate the stenosed area, but tomorrow or next day we will endeavor to pass a bougie into the stomach. I think by gradual dilatation we will be able to entirely overcome the constriction

The foregoing case is the second one of esophageal stenosis due to typhoid fever that has come under my personal observation The other one was seen about fourteen years ago. The patient was from Tennessee and was referred to me by Dr. Frank C. Wilson, of this city. He had first noted difficulty in deglutition after recovery from a severe attack of typhoid fever, and came to Louisville with the expectation of having a surgical operation performed for relief. I was able, however, to introduce a flexible bougie through the stenosis and effect dilatation. The patient was in good physical condition, and a preliminary gastrostomy was not performed. I took two ordinary urethral bougies which were too soft to inflict any injury yet firm enough to pass through an ordinary constriction, and placed the end of one into the other, fastening them together with thread, which gave the required length. This instrument was then passed through the stenosed area without any especial difficulty. The following day a larger catheter was used, and thus without any special instruments dilatation was accomplished. In about three weeks from the time the patient came here the lumen of his esophagus was practically restored. Two years later he sent me his photograph to show me how well and fleshy he had become, and in a letter stated that he had experienced no further trouble.

I have not noticed in any surgical text book any reference to esophageal stenosis due to typhoid fever, but these two cases indicate that it must be more common than previously supposed. It is easy to understand that ulceration from typhoid fever might occur in the esophagus as well as in other portions of the alimentary tract, and if the ulceration is extensive it might cause a considerable degree of stenosis.

Ordinarily, I believe, if these cases are observed early they can be cured by proper methods of dilatation without resort to surgical intervention. Of course, if they are neglected until the patients have become markedly emaciated and practically starving to death, gastrostomy must be performed to afford a means of nourishment, after which dilatation of the stenosis may be accomplished by the most appropriate measures.

REMARKS:

Dr. J. B. Lukins: I had the pleasure of seeing both patients mentioned by Dr. Grant. In the second case a splendid recovery occurred under simple dilatation. In my personal practice I have never encountered a case of esophageal stenosis following typhoid fever.

Dr. W. A. Ouderdonk: Esophageal stenosis following typhoid fever has never been encountered in my practice, nor do I recall having read reports of any such cases in medical literature. I have had only one case of esophageal stenosis, and that occurred in a four-year-old girl after the accidental ingestion of concentrated lye. In that case a perfect recovery followed gastrostomy without dilatation. The child was fed for several months through the gastrostomy opening, the esophagus being thus placed at complete rest. The gastric wound closed spontaneously, and by that time the stenosis had disappeared. I have wondered whether such a result often occurs, or whether in the majority of cases dilatation is required.

Dr. H. H. Grant: Answering Dr. Onderdonk's question: By feeding the patient for some time through the gastrostomy opening, in rare instances relaxation of the stenosed area occurs spontaneously. If there is complete relaxation, it may not be necessary to practice dilatation. It must be remembered, however, that in stenosis such as he describes, i.e., due to the ingestion of corrosives, it is sometimes difficult to keep the esophageal lumen patulous. The tendency of cicatricial tissue to contract is well known, and the esophagus sometimes closes in spite of everything that can be done.

DEATH FROM CARBOLIC ACID: FOREIGN BODIES*

BY JOHN E. KINCHLOE, M.D.

Hardinsburg, Ky.

A male child, eighteen months old, had been taught by his grand parents to drink out of a bottle "like a man." One day while playing about the room where the mother was at work, the child found a bottle of carbolic acid in a tool chest which was standing open, and evidently thinking it was something good to drink, put the bottle to his mouth and took a swallow or two. He screamed and started toward the mother, but fell to the floor unconscious before taking half a dozen steps. Strange to say this child lived twenty-seven days, and finally died in convulsions.

I was recently called hurriedly to the country to see a female child of two years who had a foreign body of some kind in the lung. The nature of the foreign body was never definitely determined. This child lived three days and died in convulsions, with a temperature of 106 degrees F. There was considerable hemorrhagic material expectorated during the three days. The foreign body evidently passed through the tracheal lumen and lodged in the right lung. Surgical treatment was refused.

---

*Clinical Report before the Society of Physicians and Surgeons, of Louisville, Kentucky, February, 1915.

In another case, which did not come under my personal observation, a female child of nineteen months attempted to swallow a salted peanut which passed into the trachea and was later demonstrated in the right bronchus. Immediate surgery was advised but was postponed for several days because of objections interposed by the parents. Although operation was later performed and the foreign body removed, the child perished from pneumonia.

REMARKS:

Dr. John B. Richardson, Jr.: Not long ago a girl of four years was brought to me by the mother who stated she had a shoe button in her nose. A child's nostril at the age of four years is not very large. With a hemostat the foreign body was extracted, and proved to be a flat button 3-4 inch in diameter. I was careful not to inflict any injury to the child's nostril in its removal. It is amazing how so small a child could introduce a foreign body of that diameter into its nostril. Under the impression that it was a round shoe button, as stated by the mother, I feared difficulty would be encountered in grasping it with the hemostat, but being a flat dress button it was easily grasped and extracted with forceps. The button was found above the inferior turbinate bone.

Dr. J. R. Peabody: Dr. Richardson was fortunate in being able to extract a foreign body of the size stated without inflicting any injury upon the child's nostril. I recently saw an interesting case of this kind in the Manhattan Eye and Ear Hospital, New York. A boy about twelve years old came to the clinic, and I was told by one of the attendants that he had a large bean in his nose which he expected to have some difficulty in extracting. I asked the boy why he had put the bean in his nose. He said that he had visited the clinic about a month before, and some doctor had told him to put a bean in his nose, which he did and had been unable to remove it! It developed that on his previous visit the child had been instructed to put salve in his nose, using a quantity about the size of a bean. The boy had misunderstood the directions, and instead of salve had inserted a bean into the nostril. The bean had become softened and was easily removed with forceps after being cut into several pieces.

Dr. J. H. Simpson: Any foreign body introduced into the nose can usually be extracted, and by proceeding slowly there is little danger of injury as the nasal alæ are capable of considerable distension. I remember being at one time asked to remove some adenoids from a child's naso-pharynx. He was a mouth breather, and the parents thought it must be due to the presence of adenoids. Examination revealed one nostril entirely blocked by a foreign body, which proved to be a large piece of chewing gum.

INFECTION OF THE URINARY TRACT IN CHILDREN*

BY EDWARD CLAY MITCHELL, M.D.
Memphis, Tenn.

Definition.—This condition was first reported by Escherich in 1894 under the name of colicystitis. Since that time it has become more generally recognized, but is of especial importance in this country because it is so easily confounded with more common conditions and so often the cause of fevers that are laid at the door of malaria.

Etiology.—This condition embraces cystitis, urethritis, pyelitis, pyelonephosis, and is usually of bacterial origin. In the majority of cases it is caused by the bacillus coli, though it may be caused by any pyogenic organism, as the streptococcus, staphylococcus, gonococcus, or the typhoid bacillus. In my series of thirty-eight cases nearly all occurred after an acute intestinal infection, a few without previous illness, four after typhoid, five following influenza, two following scarlet fever, and one following diphtheria.

Predisposing Factors.—(1) Sex: The most common factor in this condition is sex; the ratio being about seven females to one male.

(2) Age: Age cuts but little figure, my youngest case being one and one-half months. It occurs less often after the fifth year. According to Kerley, this condition is sometimes carried over to adult life in the female.

(3) Other Factors: Some of the other predisposing causes

---

*Read before the Tri-State Medical Association of Mississippi, Arkansas and Tennessee, November, 1914.—Memphis Medical Journal.

may be foreign bodies in the bladder or kidneys, as stones, tumors, etc., and it has also been reported as being due to an appendiceal abscess rupturing into the bladder.

Mode of Infection.—The mode of infection is usually one of three ways:

(1) Ascending Infection: This is shown by the preponderance of the condition in females and the great number of colon infections following dysentery. The bacteria in the stool enter the vagina and migrate through urethra into bladder, thence up ureter to kidney.

(2) May pass from bowel to bladder through loose cellular tissue of pelvis.

(3) Secondary infection through blood stream.

Symptoms.—Usually seen in cases previously ill from intestinal disturbances, though this may have been a month or so previous. Child apparently well, though often complains of slight pain or burning upon urination. Becomes pale, usually has slight rigor, or even chill, though this does not occur in all, or even a very large percentage of cases. Fever may be as high as 105 degrees F., or even higher. In the majority of my cases fever has been the one predominating symptom. While the fever is on the appetite is lost, can rarely be made to eat at all. When the fever drops it usually returns and the child is quite hungry. Another symptom I have noticed in a number of cases is a sudden drop in temperature to subnormal after the fever has been high. The child becomes very weak bordering almost on collapse.

When the fever is up the child shows little or no prostration in proportion to the fever. They are usually restless, sleep but little and want to be held in the arms all the time. Vomiting may occur; nausea without vomiting is more frequent. Bowels ordinarily normal in every respect, stools yellow and of a pasty consistency and of no abnormal odor. Usually some slight chafing present from acidity of the urine

The fever is very irregular, subject to very sudden rises and equally sudden drops. Another characteristic is tendency toward remission for weeks or even months, then fever returns. It is well to remember that another class of cases of low grade infection present from 99 degrees F. to 100.5 degrees F. for weeks or even months, and that an urinalysis alone will clear up the diagnosis. Many of those vague, febrile conditions in children are due to this cause.

Physical Examination.—Physical examination is, as a rule, negative. Sometimes pain on pressure over the kidney region may be elicited, though this is difficult to determine in an infant Occasionally colic or pain over bladder may be encountered. In a few cases I have found rales over the lungs, leading to a tentative diagnosis of broncho-pneumonia. It is well to remember the characteristic feature of this condition is great temperature disturbance without physical signs.

Urinary Examination.—During the febrile stage the urine may remain perfectly clear, showing little or no pus. After a remission the urine usually clouds and becomes almost full of pus, the temperature being lowered in proportion to the amount of pus found. Specific gravity is usually low, 1.005 to 1.015. Most generally a trace of albumin is found. Indican most always present. No strong reaction for acetone or diacetic acid. Microscopically shows pus, at times in such great quantities as to completely obscure the field in an uncentrifugalized specimen. Over ten or fifteen pus cells to the field in a centrifugalized specimen, in cases with fever without physical signs, should arouse suspicions. Epithelium usually found; many bacteria are found in stained specimens. Have cultivated the colon bacillus in pure culture in several specimens. The reaction of the urine is an important feature. The colon and typhoid are usually found in an acid urine; streptococci and staphylococci found in an alkaline urine; the bacillus tuberculosis in an acid one. The latter condition is rarely reported and is most generally found in connection with a miliary tuberculosis. Some of the more severe cases showed hyalin and granular casts and an occasional blood cell. This usually disappeared long before the pus from the urine. This is especially true where small quantities of urine are passed and is probably caused by renal congestion due to obstruction of the urinary flow through the ureter. The gonococcus is reported as a cause. I have never seen such a condition, though I have treated numbers of cases of vulvovaginitis.

Diagnosis.—A diagnosis of this condition is very easily missed unless a routine examination of the urine is made upon all infants with protracted fevers. As the diagnosis can be made by this means, the presence of even a few pus cells in an acid urine with epithelium and colon bacilli is proof positive of this type of infection. The diagnosis should be subdivided into the (1) differential diagnosis, and (2) diagnosis as to location of infection.

(1) Differential Diagnosis: More often confounded with malaria than any other condition, owing to sudden rise of temperature, preceded by a chill or slight rigor, with a tendency to relapse; typhoid, because of the long protracted course. Often confounded with acute intestinal infections, and very often occurs in connection with same, and may so mask this condition as to greatly interfere with treatment. It is often confounded with pneumonia, and very hard to differentiate, because of the presence of numerous rales, sometimes scattered throughout the chest in this condition. In doubtful cases, where the condition is believed to be present, the urine should be cultured.

(2) Diagnosis as to Location of Infection: This condition most often occurs as a pyelitis and usually terminates as such when treatment is at all promptly instituted. In the neglected cases it sometimes becomes a pyelo-nephrosis. This is usually diagnosticated by the methylene blue test, to-wit:

Give methylene blue for twenty-four to forty-eight hours. In cases of simple pyelitis the greenish color will soon disappear from the urine after the withdrawal of the drug. In case the green color disappears for a few days and returns with a discharge of pus it is considered fairly reliable evidence that another localized abscess has broken down. In the cases of cystitis there is usually pain and more burning than when the infection is higher up.

Duration and Prognosis.—Depends entirely upon promptness of diagnosis. Early and prompt treatment usually means freedom from second attack; unrecognized cases often run weeks and sometimes years. It is not unusual for this condition to recur after six months freedom from any symptoms whatsoever, and whether it is a reinfection, or a return of the old one, is not definitely known. The majority of cases, in fact all, recover. The few deaths reported are those entirely neglected and who died of inanition. Cases should never be considered cured until urine is free from pus for at least a year, with repeated and frequent urinalysis.

Treatment.—(a) General: Medicinally, hexamethylenamin two grains, four times daily, well diluted, to a child one to two years old. Often much larger doses are given and well borne if sufficient water can be forced. I usually give equal amounts of hexamethylenamin and sodium benzoate. Some recommend dilute hydrochloric and acetic acids when the urine is alkaline. The hexamethylenamin is usually given for a few days and alternated with citrate of potash in very large doses, giving ten grains four or five times daily. It is well to continue citrate of potash, especially at intervals, say six days' treatment and six days' rest, until pus disappears completely. The bacillus bulgaricus is used by many in the treatment of these cases because of its beneficial action in the treatment of colon infections in general. It may be used in the form of a liquid culture internally, or, in the form of buttermilk enemas.

(b) Local: Local treatment is not generally recommended. In six of my cases, all colon, I used bladder irrigations of a saturated solution of boric acid, followed by a 2 per cent solution of aluminum acetate with what I considered excellent results. In those due to the colon bacillus all were protracted and recurred after long periods of remission; and in all these cases the urine was very cloudy, and had, as the mothers described it, an odor like bowel movement. In cases where this method was pursued the urine was kept strongly acid.

(c) Vaccine Treatment: There is quite a difference of opinion as to the value of vaccine treatment. In my cases I have had no results from stock vaccines. In three cases I thought improvement was shown after the use of an autogenous vaccine.

Report of Cases.—My series embraces thirty-eight cases, of which the following are the most interesting:

Case 1: Baby R., female, age 15 months. Breast baby, well nourished. Had colitis at three months with profuse and bloody diarrhea, which lasted one week. One month later developed high temperature, slight rigor. This lasted about ten days; was diagnosed malaria. Second attack I saw in consultation three months later. Showed no physical signs except a few rales over both lungs. Temperature 103 to 105 degrees F for ten days. Blood examination showed 28,000 white blood cells; no malaria; polymorphonuclears high. By exclusion was diagnosed pneumonia; urine not examined. Third attack followed two weeks later; at the start was much more severe than either of the preceding attacks. Blood picture was the same and urine was found to be full of pus upon examination.

Showed a few hyalin and granular casts and an occasional blood cell, as well as considerable epithelium. Diagnosed pyelitis and hexamethylenamin was given. In one week condition cleared up; casts, albumin and blood cells disappeared, a small amount of pus remaining. Potassium citrate, twenty grains a day, was given for three days a week for a period of four months. At the end of the fourth month urine having entirely cleared up, treatment was discontinued. One month later fever again rose and continued high for eighteen days (see accompanying chart); chill, or at least chilly sensation, initiated attack. Child had no appetite; was intensely nervous, sleeping but little an hour or two at night, none during the day. Color pale waxy; lost some weight. At the end of this time passed a large quantity of urine densely clouded with pus and fever dropped and remained down for two days. Again rose, and after this the urine was very clear, showing but few pus cells, even in a centrifuged specimen. Leucocytes, 32,000; no malaria; negative Widal; polymorphonuclears very high; no soreness over kidneys or bladder; x-ray of urinary tract was negative. Catheterized specimen showed pure culture bacillus coli. During first attack hexamethylenamin and citrate potash were given in large amounts. Child's diet was not restricted. At the beginning of the second attack, or relapse, it was noticed that the urine had some odor. The bladder was irrigated with a saturated solution of boric acid and followed by a 2 per cent solution of aluminum acetate once a day for five days. In addition to the above the live culture of the bacillus bulgaricus was given orally as well as in the form of buttermilk enemas. After ten days the temperature dropped to normal and remained so for three months. During this three months freedom from fever hexamethylenamin in two-grain doses, four times daily, was given three days a week. The next month gave citrate of potash, twenty-four grains daily, on alternate weeks. There was no digestive or other disturbance following this continued medication. During this time the child gained in weight and the color got better. At the end of this time the fever again rose and remained high for five days, when it again dropped. During this last rise hexamethylenamin was given constantly. Since then the fever has risen three times at regular intervals of from eight to ten days, and has not remained over forty-eight hours at any time. An autogenous vaccine was made. Twenty million were given as first dose three days after a remission of fever. There was no local or general reaction as a result. After five days fifty million were given. There was a slight local reaction and fever went to 105 degrees F. and remained at that degree for forty-eight hours after injection was given. One hundred million, third injection, was given five days later and showed a somewhat similar reaction, though not so severe. Two hundred million, the fourth injection, was given two days ago and has caused no local or general disturbance. During the entire course of this attack the child has, at no time, shown any localized tenderness, and has regained during the intervals all her weight and strength lost during the spells. The methylene blue test was given, but after the coloı once disappeared it remained absent. The last examination of urine still showed considerable pus.

Case 2: Baby H., age two and one-half years; daughter of a physician. Sudden rise of fever, slight chill; pain on urination. Urinalysis showed large amount of pus, colon on culture. Started treatment. Hexamethylenammin and sodium benzoate internally; bladder irrigations. Cleared up in three days and has remained normal since for a period of ten months.

Case 3: Baby B., age two years; female. Attack of colitis fourteen months ago. One month later had sudden rise in temperature. Pus in urine. Treatment instituted. Condition promptly cleared up; treatment continued for six months, urine showed no pus. Six months ago began to run temperature 99 to 101 degrees F. Urine contained a small amount of pus and had a very bad, almost fecal, odor; very acid, causing severe chafing Irrigation with aluminum acetate and citrate of potash internally promptly cleared the urine and temperature dropped to normal.

Case 4: Baby J., female; age four and one-half years. Ran daily temperature of 99 degrees F. to 101 degrees F. for months Did not seem sick; tongue continually coated, appetite not good. Blood examination negative. Urine very acid and showed few pus cells in centrifuged specimen. Thirty grains of citrate of potash cleared up this condition in six days. Has not returned, but have continued to give citrate of potash four times daily for five days each month since. Monthly urinary examination shows no pus.

Case 5: Baby G., female; age two and one-half years. Severe attack influenza. Temperature became normal in about eight days and remained so for three or four days, and again rose, with no physical signs. Examination of urine showed a few pus cells and a trace of albumin. Culture showed a small Gram negative bacillus in almost unmixed state. Condition improved very rapidly under hexamethylenamin.

In addition to cases noted, our records show five following influenza, four following typhoid, one as late as three months afterward; three, pneumonia; two, scarlet fever, and one from diphtheria. All the remainder were following intestinal infections. The more severe and prolonged cases were all in the female and all followed an infective diarrhoea.

Summary.—The recognition of this condition is of great importance, because if treatment is promptly instituted the disease is limited to one attack. As you can see by the reports, neglected cases run months and even years, and some authors claim that the condition is carried over into adult life.

Fatal cases of pyelo-nephrosis have been reported.

It is especially well to remember that a case should never be considered cured without obtaining frequent and repeated negative urinalysis, also cultura urine. In dysenteric troubles it should be recalled that a frequent urinary examination should be made, if for no other reason than to discover an infection of this kind.

701-705 Exchange Building.

APPENDICITIS IN CHILDREN *

BY MALVERN B. CLOPTON, M.D.
St. Louis, Mo.

I have selected the subject of appendicitis in children for my address because it has been a matter of much interest to me, and because there are certain points that should be emphasized even at the risk of appearing trite. In children the disease differs from what we are accustomed to see in adults. The special peculiarities of appendicitis in children are the "insidiousness of onset, the rapidity of its progress toward perforation or gangrene and extravasation of the intestinal contents, with the subsequent production of peritonitis, either

---

*Read at the meeting of the Medical Association of the Southwest, Galveston, Texas, Nov. 11, 1914.—Missouri State Journal.

local or widespread" (Finney). As it is more frequent than has been supposed, and the symptoms are often mistaken, and if mistaken lead to serious developments, the disease assumes a special importance of its own, and as the disease is more rapid than in adults, treatment must be applied at the earliest opportunity and surgery offers the only relief.

Frequency.—From earliest infancy to old age no time of life is immune from this disease. One of the youngest cases reported is by Dixon, who operated on a 24-day-old baby with a strangulated hernia in which a gangrenous appendix was found A few cases, because of the difficulty of diagnosis, go unrecognized, but the fact remains that appendicitis in infants is a very rare disease. McCosh found that only 1.7 per cent of his 1,000 cases occurred between the age of 1 and 5 years, and Churchman,[1] analyzing 1,223 cases treated at the Johns Hopkins Hospital, found less than 1 per cent in children under 6 years, and he states that the surgical problem of appendicitis in infants is that of diagnosis, and that the difficulty of diagnosis keeps up the mortality. About 16 per cent of all cases of appendicitis occur in children. Deaver found in his series of 500 cases in children that 8 per cent of the cases were in the first five years. Churchman constructed charts from the figures of frequence of appendicitis in the various five-year periods, from infancy to old age, using the tables of the Johns Hopkins cases and those of McCosh. These were strikingly similar and showed that the curves are nearly symmetrical, rising rapidly to the summit between the 21st and 25th years (20.85 per cent of his cases) and falling as rapidly to the 40th to 45th year, and then more gradually dropping to the later years. Barmann states that the danger of appendicitis in children is greater in the first years of life, and finds a 50 per cent mortality in all infants under 5 years that were treated in the 117 cases in children reported in his series.

In the cases of appendicitis in children treated within the past eighteen months at the St. Louis Children's Hospital we

---

1.—Churchman figures for frequency are .735 per cent. for 1 to 5 years, 4 per cent 5 to 10 years, 11.44 per cent 11 to 15 years, making 16 per cent for all cases up to 15 years. McCosh's table shows 1 to 5 years 1.7 per cent, 5 to 10 years 5.1 per cent, 10 to 15 years 8.5 per cent, or 15.3 per cent for children up to 15 years. Deaver considering only the 500 cases of children he had operated, found 40 (8 per cent) 1 to 5 years, from 6 to 10 years the frequence jumps to 36 per cent (180 cases) and reaches 56 per cent in those between the ages of 11 and 15 years (280 cases).

have 9 per cent in the first 5 years, 54 per cent between 5 and 10 years, and 37 per cent in the 10 to 15 year group.

In all the reports we find the males greatly increased over the females, just as is found in adults.

Pathology and Etiology.—The important feature of the pathology of appendicitis in children is the early development of gangrene, either of the whole organ or portions of it. The acute catarrhal stage is rapidly passed, and the diffuse inflammation brings about a thickening and lengthening, so that we find appendices of over twice their normal length (the appendix in children is relatively longer than in the adult), and as big as the index finger. In the mildest cases the mucous membrane is swollen and reddened with but slight infiltration of the more external layers, and there is an increase of secretion which may escape into the cecum, and the inflammation subside. Repeated attacks of such catarrhal inflammation leave the appendix thickened, its lumen narrowed or constricted at points, its mucous membrane swollen or ulcerated. The acute stage may go on to excessive hyperemia, with prominent blood vessels, and the canal contain a purulent exudate often mingled with blood. Ulceration is usually irregular and ragged, and external evidence of this is seen in dark colored areas on the surface, which early tend to perforation. These ulcerations frequently correspond to the location of a fecal concretion. It is not uncommon to find miliary abscesses due to the direct action of bacteria on the tissues. But as stated before, the most characteristic finding in children is gangrene, which follows an obstruction of the circulation, either of a small artery supplying part of the organ, or of the main vessel. The obstruction of the blood supply may be from a progressive infectious thrombosis, or by twists and angulation. Gangrene may also be present, caused by the tension of the unyielding muscular coats when pressed upon by the intense swelling of the inner layers. Churchman finds that appendicitis in children presents certain pathologic features which distinguish it from the same disease in adults, namely: the tendency to early perforation and the frequency of spreading peritonitis. In our cases a third have been gangrenous throughout, or in part, and perforation has accounted for the peritonitis in another large group. Only one-third of our cases have been uncomplicated acute inflammations, where the inflammation has been confined to the appendix and permitted a closure to the wound without drainage. One-half of the cases have had a more or less localized collection of pus outside the appendix, and one-eighth of the cases showed a spreading peritonitis. The position of the appendix as shown by Kelly is most frequently downward and inward and the tip lies in the peritoneal cavity. In his anatomic study the retrocecal position either of the extraperitoneal ascending type, or lying along the posterior wall of the cecum, but covered with peritoneum, formed a small proportion (4 per cent) of the cases. We have found in our operations on children for appendicitis that the appendix has been retrocecal in 30 per cent of the cases, and many of these have been gangrenous. We have not found the appendix in the pelvis often. Several times we have noted a half twist of the meso-appendix, which probably was a factor in the stasis that resulted in gangrene. Twice have we had definite history of trauma, once in a boy who hurt his abdomen crawling over a fence, and five days later when we saw him and operated he had a gangrenous appendix with a large localized collection of pus. The other case was a boy who had been hit over the right side of the abdomen with a base ball. The following day he had acute pain and vomiting, and when we saw him and operated on the third day a gangrenous appendix was found lying in an abscess. Fecal concretions have been found in a fifth of the cases. Springer believes they are more com mon in children than in adults. In one case operated several years ago, in a boy of twelve, we found two raisin seeds that lay at the tip, which had become gangrenous. Family predisposition was also noted in this case, as he had two other brothers who had similar severe cases, without the foreign body, however. There are many instances in the literature, as well as in our experience, which point to the likelihood of members of certain families being attacked by appendicitis. Still draws attention to the pinworm (oxyuris vermicularis) as the cause of catarrhal troubles in the appendix. We have in three cases found the large swollen appendix with a sanguine purulent collection in the lumen, the pin-worm undoubtedly having been the exciting cause, as they were numerous in the discharge. Other intestinal parasites may cause intestinal irritation that leads to appendicitis, but their casual role is not so prominent as the pin-worm. Enteric fever and intestinal catarrh certainly produce congestion of the appendix, which with superficial loss of epithelium may prepare the way for infection of the deeper layers. After an epidemic of influenza there have been severe acute attacks of appendicitis. On account of the large amount of lymphoid tissue, the appendix has been called the abdominal tonsil, and it has been considered as likely of invasion as the lymphoid tissue elsewhere. The association with the infectious and contagious diseases is possible. Hamburger and Finney have found appendicitis in association with acute rheumatism and with measles, but we have not encountered it.

Symptoms.—The general consensus of opinion is, that the symptoms of appendicitis in children are vague and indefinite and lack the pointed precision of the adult form, in which the diagnosis is frequently made before the visit of the physician. This difference between the disease in infancy and childhood and that in later life, assumes the utmost importance, when we consider the likelihood of an early grave pathologic change in the appendix in early life. As Finney says: "In the adults the tendency is perhaps rather to mistake something else for appendicitis, while in the child it is to mistake appendicitis for something else, and therein lies the danger." Most of the cases come on suddenly with vomiting and violent cramping, but it is often impossible to gain a clear statement of the character of the pain or get any aid in locating the seat of greatest intensity. In a fair number of cases the onset is rather mild, without much vomiting, and comparatively little pain, or the attack may be ushered in with a headache and practically no complaint of the abdominal distress. Vomiting is a fairly constant symptom, and it may usher in many of the diseases of childhood. But in them vomiting usually ceases after the stomach has been emptied, however, should it continue, it is fair evidence of irritation in the intestinal canal. Pain may be continuous or colicky, it may be severe or mild, or there may be little or none at all. Frequently it is general, but in our experience it has in more than half the cases been referred to the right iliac fossa. This is not in agreement with Finney, in whose experience the initial pain, when referred to any region below the umbilicus, has its origin much more frequently in some other structure than an inflamed appendix, while the pain of appendicular origin almost always is referred to the umbilicus or the epigastrium. In those cases where pain is on the left side, the appendix has been pointed in that direction, and in a few instances has ruptured with the the formation of an abscess or general peritonitis. One of our cases began, two weeks before admission, to complain of the hip, and there was only the slightest abdominal pain, with no vomiting. She limped about and slept poorly, but had no definite night cries, and the child was feverish. She was brought to the hospital, her thigh flexed to 45 degrees, with a diagnosis of hip disease. A mass was found in the appendix region, which proved to be an abscess with a gangrenous appendix lying in it. The danger of mistaking chronic appendicitis for hip disease was pointed out by Gibney in 1881, and it is well to bear in mind that the inflamed appendix can rest on the psoas sheath and give confusing symptoms that may be considered as originating in the hip. In a few of our cases there has been disturbance of micturition either when trying to urinate, or as in one chronic case with repeated attacks, the frequent and painful urination far overshadowed the mild abdominal pain. Some authors consider pain accompanying micturition of the greatest diagnostic significance. In one of Churchman's cases in infants, the chief complaint was painful micturition suggesting calculus and retention of urine, and all symptoms disappeared after emptying and searching the bladder, but shortly the baby sickened again and was operated, when a perforated appendix was found.

In the chronic form of appendicitis, the digestive disturbances are usually the chief symptoms, and nutrition is often so low that there may be marked emaciation. Other chronic cases show disturbance only at the time of the attacks. In our experience the chronic form is very uncommon, representing less than one-fifth of the cases. This is in contrast to appendicitis in adults, where over half of the cases operated on are of the chronic type. This dis-similarity may be due in part to the failure to recognize the chronic form in children, and the greater ease of diagnosis of the acute type, particularly in the presence of a mass or rigidity. However, we are inclined to believe that the bad acute cases, either are so severe that the diagnosis is forced on the practitioner and they call the surgeon in consultation, or that the illness so rapidly becomes grave and hopeless that nothing is done.

Deaver contends that "all cases of abdominal trouble in children are appendicitis until proved otherwise," and the proof is gained only by a most careful systematic examination of all the organs. Abdominal palpation in a child offers difficulties that are hard to meet, particularly in a sick, frightened child in great pain, but it is possible to overcome it with tact and patience and make a satisfactory examination. Tenderness over the appendix with muscle spasm are the earliest and most valuable signs, and should we fail to find them on the first examination, we should return from time to time. In an incredibly short time the picture will change, and the earliest opportunity to explore is the one that discloses the least diseased appendix. An important finding in many of our cases, inasmuch as so large a proportion of the appendices have been retrocecal, has been tenderness in the loin, which has been a little lower down than the tenderness of pyelitis, or beginning perinephritic abscess. Rectal palpation affords a more valuable aid than in adults, as the finger can extend higher and the appendix can be more easily reached, so that even in the acute stage the tenderness or mass can be made out. When an abscess has formed or peritonitis has started in the pelvis there is an unmistakable fullness, before any such evidence is shown through the parietes. Karewski points to the fact that most cases of appendicitis are preceded by attacks of gastro-intestinal disorder with more or less pain and diarrhea, together with nausea and vomiting, so that in the beginning of an attack, attention is directed to the digestion. In our series of acute cases there had been no irregularity of the bowels in over half, while constipation and diarrhea were present in about equal proportion of the remaining cases. The temperature, pulse and respiration are of less diagnostic significance in children than in adults because of their greater variation and their proneness to respond to slight stimuli.

The value of the leukocyte count is mainly confirmatory of inflammation. There has been no difference in the average count of pus cases and those without pus (19,000 white blood cells to c.mm.), nor have we been able from the differential count and the actual count to make any prognosis. The counts have varied from a 32,000 count (95 per cent poly.—5 per cent mono.) in an acute catarrhal case, to 8,800 (76 per cent poly.—24 per cent mono.) in a gangrenous case with peritonitis. The generally accepted view is that the prognosis is favorable the greater the leukocytes and the larger the proportion of polymorphonuclears, provided the temperature and pulse are proportionate and not high, while the lower the leukocytes and the lower the temperature and the more frequent the pulse the more unfavorable and severe the course.

The course of appendicitis in infants makes a diagnosis even more difficult than in children. An infection of the severest type may be present without giving any of the classical symptoms, and even a general peritonitis may develop while under watchful care. Churchman's analysis makes him observe that all urinary symptoms in children should suggest the possibility of appendicitis, and in infants with apparent hip joint disease, particularly if the thigh is flexed this possibility should be kept in mind. Selter points out that the younger the child, the deeper the cecum and appendix in the pelvis, and it is conceivable that bladder symptoms may be the most prominent. Rectal examination in infants often gives us the most valuable information, and catheterizing the bladder may help a great deal in clearing up a doubtful case.

Diagnosis.—The propensity of children to eat irregularly and indiscretely of appetizing but indigestible foods makes gastro-intestinal disturbance not only common, but expected crisis in every child's life. These distressing disturbances may be the forerunner of appendicitis, and under such circumstances, disease developing in the appendix may be overlooked and a speedy cure expected from a dose of oil and fasting. Mistakes are not unlikely, therefore the abdominal and rectal signs should be carefully watched for, particularly if the administration of a cathartic is ineffectual or makes the pain worse.

Next to indigestion, pneumonia is perhaps the disease that comes to mind most frequently when we consider the likelihood of a mistake in a case that is not altogether clear. At the onset of a right-sided croupous pneumonia pain may be referred to the abdomen that incriminates the appendix, there may be vomiting with distention of the abdomen and the clinical picture may be most deceiving. The lung findings may be negative at first, but the absence of spasm of the abdominal muscles can give us confidence to postpone interference until the signs of pneumonia appear. Many cases have been operated on this mistaken diagnosis, and we can testify that in the few cases we have seen where we suspected pneumonia, although the lungs seemed clear and the signs were all abdominal, the interval of waiting was an anxious one and not at all comfortable, and there was a great relief when consolidation was made out. Morse says that "if in addition to the acute onset and high temperature the rapidity of respiration is increased out of proportion to that of the pulse, the combination is almost pathognomonic of pneumonia. This is true even in the absence of a cough."

Intestinal obstruction may be due to volvulus or to intussusception, and either may be mistaken for appendicitis in the early stages. Intussusception is important to differentiate as it is largely a disease of childhood, coming on suddenly, with tympanites. The paroxysmal pain, discharge of bloody mucus from the anus and a sausage-shaped tumor which shifts and lack of muscle spasm offer points of difference from appendicitis, but as the peritoneal irritation and infection develop, due to the permeability of the gangrenous bowel, differentiation from appendiceal peritonitis is impossible. There are also those cases of intussusception where the intussusceptum starts at this point of the colon. Some cases are reported of inversion of the appendix which formed the tumor that tipped the intussusceptum, and there is a case reported where the stump of an appendix formed a tumor that led to a return of an intussusception which had been operated and reduced and the appendix amputated (Burghard).

The recurrent vomiting of children, attended as it sometimes is with fever, may give the impression that the case is one of appendicitis with mildly inflamed extraperitoneal appendix which fails to give the signs of peritoneal involvement. The almost constant association of acidosis with cyclic vomiting is well known, and the appearance of acetone on the breath and in the urine helps to make the diagnosis. On the other hand we found acetone in the urine in at least a third of our cases before operation and in about half after operation, and in a large number the breath has had the characteristic sweet odor which is unmistakable. While we have not as yet seen a case of cyclic vomiting in children where we suspected the appendix, that such confusion may arise is possible. In our hospital work, where children of the poor are treated, cyclic vomiting is not as frequent a finding as among the children of the well-to-do, and the differential diagnosis is therefore not as often called for.

Hip disease may be simulated in cases where the diseased appendix tip reaches along the psoas either with or without an abscess forming. Gibney's cases have many duplicates in later practice similar to the one that I have already mentioned.

A careful examination can usually rule out hip-joint disease by showing lack of muscle spasm. The limitation of motion is usually to full extension to the limb due to contraction or spasm of the psoas. In the later stages the Roentgen ray may help by ruling out disease of the bone. There is a reflex pain in the sacro-iliac joint or neighborhood that may be due to a diseased cecum or appendix as we have seen on one occasion and as one is reported by Kelly. Lumbar abscess of Potts has been mistaken for appendicitis.

The appendix is found in the hernial sac of children due, according to Piersol, to the anatomic connection of the appendix with the plica vascularis, and to the adhesions of the appendix to the migratory peritoneum adjacent to the cord, or to the low lying cecum with a long appendix and a wide open inguinal ring. In one instance under our care the appendix was suspected as part of the contents of the hernial sac before operation and was so found later. We have twice removed appendices appearing in the course of hernia operations, because they have appeared thickened. Dixon operated on a 24-day-old infant for strangulated inguinal hernia, and found a gangrenous appendix. Gloneger (quoted by Kelly) operated on a 41-hour-old baby for a hernia along the umbilical cord in which were the cecum and part of the colon and small intestines. The appendix was thick and stiff and was removed. The baby recovered.

Tuberculosis of the peritoneum may originate in the appendix and may give a picture that in the beginning is very typical, but later offer many difficulties of diagnosis. The enlargement of the mesenteric lymph-nodes, particularly if due to tuberculosis, have presented masses that were tender, and when these masses were located in the right iliac fossa have been mistaken for appendicitis. It is rarely necessary to consider gall-stones in making a differential diagnosis because they are practically unknown in children. The pain in pyelitis often mimics appendicitis and the tenderness adds to the confusion.

Complications.—Of the most frequent complications of appendicitis, abscess is so common, particularly in children, that in them at least it is considered part of the disease and we are delighted when we do not find it. Secondary abscesses are uncommon, though not rare, occurring usually beneath the liver, and usually making their diagnosis one of considerable difficulty. They occur less frequently in children than in adults and may come early or be very late, even as long as one and a half years after the primary appendectomy. The infection usually reaches the under surface of the liver as a direct extension upward from a general peritonitis, or through the medium of the portal vein or by lymphatic extension up the retroperitoneal cellular tissue. It occurs in less than 1 per cent of cases according to Ross. Peritonitis, if local, usually results in an abscess, but often there is little or no effort to wall off infection. Peritonitis has been extensive in one-eighth of our cases, but the pelvis has been involved more frequently.

Intestinal obstruction due to appendicitis occurs in about 2 per cent of the cases, according to Korte. The early obstruction which represents half of these cases is due to paralytic ileus, either from the peritonitis or from kinks due to adhesions or from thickening of the bowel. The late cases are always mechanical. These cases offer a grave prognosis either when the obstruction has occurred before the appendix was removed or after appendectomy. Usually half of them die. The best prevention is early operation.

Septic pneumonia follows appendicitis, or operation for pus or peritonitis in a certain proportion of cases, and is probably independent of the kind of anesthetic given.

Results.—The comparison of the results of operations for appendicitis in adults and children will show more favorable figures for the children. Cases that have been weakened by infection and unable to take nourishment because of obstruction due to the peritonitis, have been given up as hopeless, but still respond to treatment and turn the corner and begin to improve and eventually get well. More than once have we seen cases with a general peritonitis get over it, develop obstruction of the bowels, which disappeared, and they eventually succumbed to an enteritis that was too severe for the weakened organism to withstand. Deaver, in his 500 cases of appendicitis in children, found a mortality of 4.6 per cent. We have in our series had a mortality of less than 4 per cent. These figures compare favorably with the recent figures for adults given by Schnitzler, who operated 2,000 cases with a mortality of 10 per cent, of the Presbyterian Hospital cases with a mortality of 6 per cent in 1,200 cases, or 10 per cent if only the acute cases are considered. In all statistics the mortality rate for operations performed in the first twenty-four hours is from

1 to 3 per cent, and the rate mounts rapidly up to 25 per cent for late operations. As Churchman says, the mortality in infants is due to the inability to make diagnosis until it is too late to expect cure.

Treatment.—We believe that all cases of appendicitis in children should be operated immediately the diagnosis is made. In the beginning of the attack one may be able to remove the infected organ intact with its dangerous contents safely enclosed. Under such circumstances the mortality is a negligible quantity and dependent on accidents over which the surgeon has little control. Of the propriety of operation in the presence of such acute lesions or of operation during the quiescent periods of disease for chronic or relapsing conditions there is no question. In the presence of a localized abscess the operation is to drain this collection and to remove the appendix if possible without prolonging the operation unduly. In rare instances where the appendix is hard to find and seeking for it will entail dangerous handling of uninfected tissue, it is best to leave the source of trouble and be satisfied with evacuating the pus, and postpone the removal of the appendix for a second operation; but in our experience those cases are rare, and we take out the appendix in practically every instance. The dangerous stage of appendicitis, occurring between the third and sixth day with the infection not circumscribed, but involving the neighboring organs in the acute inflammatory process or the early pathologic changes of a circumscribed or general peritonitis, gives us the period in which the question of operation has divided the surgical world into two camps. Shall we operate such cases immediately or shall we delay and follow Ochsner, and by diminishing peristalsis wait until these intraperitoneal processes are well localized, and by giving abundant fluids help to dispel the general toxemia? Our practice has been to operate these cases as soon as consulted, making the chief object of the operation to drain the peritoneal infection, and the removal of the appendix is only done when it presents itself immediately to hand. Our results have been satisfactory enough to make us continue this practice. Finney says that he feels safer to make a quick incision inserting a drain at the most dependent portion, and then to apply the Ochsner treatment, and he calls attention to the fact that in children the Ochsner treatment cannot be carried out to the same extent as in adults. Certainly the least that one can possibly do that is effective under these circumstances is often the best that one can do. Opposed to these beliefs we find Deaver, who, in cases of localizing abscess, with diffuse peritonitis, general abdominal tenderness with more or less distention and bilateral rigidity, and moderately high temperature, defers operation until a localized collection is made out, when the abscess is evacuated. In 20 of his 500 cases he waited from two to twelve days. In these cases whether we wait or not, the peritoneum must be handled gently. If the peritonitis is general or pelvic a split rubber tube is inserted into the lowest part. The abscess cavity is drained with a gutta percha covered gauze strand. The patient is propped up in Flowers' position and all fluids are withheld by mouth, but every hour from 2 to 4 ounces of plain water is injected into the rectum. We have not been successful with the Murphy drip in the rectum of children except in cases that are so sick that the annoyance of the rectal tube is passed unnoticed. Morphin in small doses is used to keep down the pain and the strain of a long illness, where starvation and intestinal distress have worn down their resistance, restlessness and sleepness are overcome by small doses of the deodorized tincture of opium or chloral given by rectum.

Intestinal obstruction is an all too frequent complication of peritonitis after appendicitis. It is due either to a paralysis due to the infection or to bands and adhesions which form later. If the frequent use of the stomach tube fails to show relief of the vomiting and distention, it is sometimes necessary to do an enterostomy, as rapidly as possible, selecting the first distended loop that presents itself. If the obstruction develops late, it may be due to a band of constriction which can be divided or it may be necessary to sidetrack the bowel around the obstruction.

We use for most cases the Kammerer incision, as it is easy to drain through, and if we can close the wound, it makes an excellent closure. We try to use nitrous oxid and oxygen as an anesthetic in all pus cases, and hesitate to give ether in these cases because of the toxic effect which is enhanced in the presence of infection. At times we have to give a little ether in combination with nitrous oxid to carry the anesthesia deep enough. In interval cases we use ether, just as in any abdominal case.

Humboldt Building.

References:

Karewski: Deutsch. med. Wchnschr., 1897, xxiii, 294.
Selter: Arch. f. Kinderh. 1901, xxxi, 89.
McCosh: Jour. A. M. A., Sept. 24, 1904, p. 853.
Finney: Old Dominion Jour. of Med. & Surg., 1910, x, No. 3.
Manley: Jour. A. M. A., June, 1901.
Bramann: Deutsch. med. Wchnschr., 1909, xxv, 1591.
Gibney: Am. Jour. of Med. Sci., 1881.
Ross: Jour. A. M. A., 1911.
Dixon: An. of Surg., Jan. 1908, p. 57.
Burghard: Brit. Jour. of Surg., April 1, 1914.
Churchman: Bull of the Johns Hopkins Hosp., 1909, xx, 31.
Deaver: Jour. A. M. A., 1910.

INTESTINAL TOXEMIA OF THE NEW BORN DUE TO RETAINED MECONIUM

BY PHILIP SHERIDAN POTTER, A.B., M.D.
Syracuse, N. Y.

Baby C., born January 15, 1915; birth weight 7½ pounds, present weight, nine days old, 8½ pounds.

Family history negative.

First child, full term, labor easy and normal, good condition after birth. No miscarriages.

Is breast nursed, feeding every two hours. The baby has progressed well and the normal milk stools had appeared.

Friday, January 22, 1915, at about three o'clock in the morning, the baby began to scream as if it had colic and refused to nurse and seemed very feverish. A teaspoonful of castor oil was given with the result of a very green movement containing a tremendous amount of mucus. The odor was not foul. There was no vomiting. When the family physician arrived in the morning he found the temperature 103 degrees F. The temperature dropped a little after cleaning out. There was no movement during the day. The baby nursed only once. It seemed hard to arouse her to do this. She would cry out frequently as if in pain. Towards evening the temperature rose again. This time she was given calomel in divided doses. The next morning there was a small movement almost yellow, no odor, much mucus and some curds. The second movement passed during the examination was yellow and stringy with some mucous and a few small curds. She acted about the same as the day before, and the physician suspected meningitis. I saw the baby in consultation about 4:00 p. m., January 23rd It lay in its basket in a sort of stupor with its head drawn back and crying out occasionally as if in pain. The expression was normal. There was some rigidity to the neck, but the head was fairly movable. The fontanelle was open and level, the navel clean. The patellar reflexes were lively and there was a slight Kernig's. The pupils were normal and reacted to light. The tongue was slightly coated with a white film. The level of the abdomen was a little above the level of the thorax, yet soft. Temperature, 104 degrees F. Rest of examination negative.

Breast milk was ordered stopped, the breasts at feeding time to be pumped, and the baby put on sugar water. High rectal irrigation advised. This was not done until the next day, the temperature in the meantime keeping high and the baby in the same condition. Following the irrigation the doctor obtained a yellow stool with some mucus. Shortly after he had left the house, the mother said a large mass came away. She said it looked like meconium and was as long as a lead pencil and the size of a finger. The temperature then dropped to normal and the baby was very comfortable.

This condition, intestinal toxemia in the new born, is best described by Dr. J. L. Morse (American Journal of Diseases of Children, Vol. x, p. 229), who says it is not at all an uncommon one and unless recognized may end fatally.

All the cases I have seen have been in consultation and have been considered by the physician usually as meningitis. In all of them, although they have been cleaned out, the breast was continued. Every one recovered quickly as soon as the breast was stopped.

In this connection perhaps it would not be amiss to quote the symptoms as outlined by Dr. Morse, inasmuch as it is practically impossible to find a description in the textbooks.

"A baby that was normal at birth and has continued to seem normal and to do well up to the second, third, fourth or even fifth day, becomes rather suddenly ill. He is likely to cry and moan considerably, although he is not infrequently unusually quiet. Attacks of cyanosis are a common and early symptom. Twitching of the extremities, slight general rigidity and retraction of the head come on in many instances, while convulsions are not infrequent. The temperature is, as a rule, only moderately raised, but may be high. In the more severe cases the baby refuses to nurse. Vomiting is uncommon. There is in most instances no diarrhoea, in fact, the tendency is to constipation. In the majority of instances the symptoms develop before the baby has ceased to pass meconium and it is very common to find it has not passed as much as the average baby. If the stools are not composed of meconium, they are usually small in amount, loose, dark brown and contain small, soft curds and mucus. They are often offensive. The abdomen may be distended, but usually is not. Loss of weight is generally rapid, the face becomes pinched and in all but the mildest cases it is evident that the baby is seriously ill. If the bowels are thoroughly cleaned out, all food stopped for a time and water given freely, recovery is usually rapid and complete. If the bowels are not cleaned out and food is continued, a fatal termination is not uncommon and recovery is, in any event, slow."

In regard to the meconium, Dr. Rowland G. Freeman shows an excellent photograph and gives a description in Vol. 27, p. 203, Archives of Pediatrics, under the title, "A specimen of Formed Meconium Simulating Intestine."

Physicians' Bldg., 608 E. Genesee St.

SOCIETY TRANSACTIONS

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Section on Pediatrics *

DR. JOSEPH ROBY OF ROCHESTER, IN THE CHAIR

The Remote Effects of Bad Feeding.—Dr. Frank van der Bogert of Schenectady read this paper. He stated that more and more importance was being attached to the part played by the gastrointestinal tract in the production of ill health. To imperfect metabolism might be attributed lack of vigor, wasting, muscular weakness and incoordination. Most of the functional disorders of childhood were dependent upon gastrointestinal toxemia. Educators were beginning to realize that naughtiness at school was indicative of disturbed health. Even vascular and functional disturbances of the eye might be dependent upon disturbed metabolism. Recognizing the important part played by digestive disturbances in the ills of childhood, Dr. van der Bogert had studied 200 cases taken from his records in respect to their dietetic history during infancy and later during childhood. Of course these 200 children were all ill. Of this number 77 or 81.2 per cent had been nursed for one year or longer; of these 77, 66 showed symptoms of chronic indigestion and 40 gave evidence of toxemia, including perverted digestion, disturbance of sleep, functional nervous disorders, and chorea. In a paper read before this society last year he had shown that there was some connection between growth and recurrence of adenoids and a bad dietetic history and it was suggested that prolonged nursing was a factor in the production of adenoids. His records showed that 60 cases having adenoids, 24, or 40 per cent, were prolonged nursers. Of 55 cases of urinary incontinence, 17, or 31 per cent, had been nursed one year or longer. Prolonged nursing meant, as a rule, carbohydrate excess, since the nursing was usually in addition to other food, between meals and at night. More than 50 per cent of the cases showed gross dietetic errors. These dietetic errors might be in the direction of proteid excess, fat excess or carbohydrate excess, though the latter was by far the most frequent. Proteid excess was rare, there being only two cases that could be considered excessive meat eaters and only two that consumed excessive quantities of milk. A study of the series with reference to indican in the urine made it safe to conclude that the presence of even large amounts of indican were not indicative of any specific dietetic excess, but rather of a general dietetic disturbance. The excess of indican seemed to originate in the decomposition of proteid matter and the condition seemed to be proteid intolerance brought about by intestinal catarrh rather than proteid excess. Certain skin lesions, such as urticaria and eczema seemed to be associated with indicanuria. The results of the ingestion of large quantities of fat were more evident in infancy than in later childhood, when they were manifested by such conditions as acidosis, recurrent cyclic vomiting, recurrent bronchitis and the effects of excess directly upon the digestive tract. The writer considered somewhat at length the carbohydrate excesses and emphasized especially the difficulty of controlling them. In speaking of the relation of dietetic errors to adenoids, he said that the invariable history of gross dietetic errors in association with adenoids and enlarged tonsils could not be disregarded; of 60 adenoid cases, over 58 per cent gave such a history. Urinary incontinence was also frequently associated with carbohydrate excess; 38 out of 55, or 69 per cent, of the cases of enuresis gave a history of having consumed large quantities of sugar and starch. Indican was present in only 13 out of 55 cases of enuresis. Of 10 cases of enuresis in which the stools were examined, eight showed undigested starch. The exudative and lymphatic diathesis, though no doubt to a certain extent congenital, were undoubtedly due to the inability of the body to utilize necessary elements of food and were dependent on faulty metabolism. In his experience fatal cases of scarlet fever and measles were almost without exception badly fed. Diet was a great factor in the outcome of whooping cough and the practice of feeding immediately after vomiting occurred was a bad one. In conclusion the writer urged a more careful study of the dietetic history of children coming under this attention since in dietetic errors lay the cause of many of the disorders of childhood as well as those of infancy.

---

*Special Report from the Medical Record.

Blood Coagulation in Infancy.—Dr. Henry L. K. Shaw of Albany read this paper and presented a simple apparatus for calculating the coagulation time of the blood. He reviewed their present knowledge with reference to the phenomenon of blood coagulation and compared the different methods that had been used for calculating the coagulation time of blood. showing that for various reasons they varied very much in the result obtained. He then presented a simple and inexpensive apparatus which was a modification of that of Dale and Laidlaw. Only one drop of blood was required, and that was taken from the finger or toe after the surface of the skin was cleansed and the first drop of blood discarded. The drop used for calculating the coagulation time was collected in a glass tube about three-quatrers of an inch in length and of a caliber only sufficient to permit a shot of the smallest size rolling back and forth. The apparatus then kept the shot rolling in the tube until the viscosity of the blood stopped it, and this measured the coagulation time. Dr. Shaw presented records of tests that he had made on the blood of normal healthy infants and children. The average coagulation time for infants under one year of age for a series of 95 examinations was 3 minutes and 47 seconds; in children between one and two years of age in a series of 35 examinations the average coagulation time was 3 minutes and 54 seconds; between two and three years of age, in 20 examinations the coagulation time was 3 minutes and 58 seconds. He had not yet made calculations as to the differences in coagulation time before and after eating at different times of the day or when the blood was taken from different parts of the body. To get trustworthy results they had to use the same sized drop of blood in all tests. He believed that a knowledge of the coagulation time of the blood in health and in disease would have a definite value.

The Treatment of Disturbances of Digestion in Infancy.—Dr. John Lovett Morse of Boston presented this paper. He stated that in discussing this subject he would use the classification of the diseases of the gastro-intestinal tract which they had adopted in the pediatric department of the Harvard Medical School and which was based, as far as was possible, on the etiology of these diseases. These three consecutive divisions of his classification were: (a) nervous disturbances of the digestion; (b) disturbances of digestion; (c) infections. By nervous disturbances they understood those conditions in which the symptoms referable to the indigestive tract were due to abnormal influence transmitted to it from unduly irritable or exhausted nerve centers. The most characteristic symptoms were those due to disturbance of the mechanical functions of the stomach and intestines. In this condition the vomitus and stools showed no disturbance of digestion. Disturbances of digestion might be caused by an excess of an otherwise suitable food, by a food too rich but otherwise well balanced, or by a food containing an excessive amount of one or of several of the food elements. When the fermentative processes predominated the picture of the condition was spoken of as indigestion with fermentation. The term fermentation was here used in its broad sense and included all the changes which took place in the various food elements as the result of the action of microorganisms upon them. The border line between infectious diarrhea and indigestion was rather an indefinite one. Infectious diarrhea was also due to the action of microorganisms, but in this condition the bacteria entered the intestinal wall and produced definite lesions of the wall, which might or might not be severe. In order to treat these disorders of digestion intelligently and satisfactorily the cause of the indigestion must be determined in a given case. Much could be learned of the etiological factor in the individual case by a careful study of the food which the baby was or had been taking. Much more could be learned, however, by a careful analysis of the symptoms, and most by a careful study of the stools. It was in most instances impossible to make a correct etiological diagnosis without an examination of the stools, and while a microscopical examination might be sufficient in many instances, the microscopical examination was advisable in every instance. This examination was not difficult and could be done in five minutes by any one with a little training and experience. When the disturbance was due to too much food, too rich food or the excess of one element of the food, the amount of food in the first two instances and the amount of the excessive element in the third instance should be cut down to a lower point than would be suitable for a well baby of the given age, especially was this true of disturbances due to fat. When an individual food element was cut down it was necessary to raise the percentage of the other elements in order to keep up the caloric value of the food. In doing this care much be exercised not to get an excess of the other elements. When the protein was at fault, because of the formation of curds, it was better, instead of cutting down the percentage of protein, to prevent the formation of curds by boiling, by the addition of alkalies, or of citrate of soda, by the use of precipitated casein or buttermilk, or by pancreatization of the food. Drugs were of little or no use in the treatment of simple indigestion. There was practically never a deficiency of hydrochloric acid, pepsin, or rennin in children. In all but the mildest acute cases the intestinal tract should be cleansed out at the beginning of the treatment. For this purpose castor oil was the most useful drug; calomel might be used if there was vomiting, and milk of magnesia in the mildest cases. In severe cases it was advisable to wash out the bowel in the beginning. When the indigestion was chronic, it was advisable to begin treatment with an initial catharsis, since this was a weakening procedure when the baby was in an enfeebled condition. When the disturbance of nutrition was extreme it might take away the baby's last hope of recovery. When the baby was vomiting food should be stopped; if vomiting was severe the stomach should be washed out. Inunctions of oils were useless in chronic disturbances of digestion. In indigestion with fermentation, which in the vast majority of instances was due to organisms which produced the fermentative changes in carbohydrates and to a less extent in fats, the stools were usually green in color, strongly acid in reaction and odor, and irritating to the skin. In these cases food should be stopped for twelve to twenty-four hours, the intestinal tract cleaned out and water given freely. It was not safe to continue the starvation longer than twenty-four hours when the microorganism causing the trouble was of the proteolytic type, because the intestinal secretions were protein in nature and provided a suitable culture medium for proteolytic bacteria. There was no objection to a longer period of starvation when the microorganisms were of types that thrived on carbohydrates or fats. In this type of indigestion the object of treatment was the inhibition of the activity of the microorganisms. Drugs and intestinal antiseptics were of little use. The salts of bismuth, preferably the subcarbonate or milk of bismuth, might possibly diminish the severity of the symptoms.

The administration of antagonistic bacteria was indicated. Lactic acid bacilli might be given in the form of broth cultures, buttermilk, or modified milk ripened by them. The latter method was preferable since the food could then be modified to meet the needs of an individual infant. Of course lactic acid bacilli should not be given when the disturbance was due to excessive action of the lactic acid bacilli. Again, the activity of the microorganisms might be inhibited by a change in the character of the infant's food, since this would change the medium in which the bacteria was growing. When a baby seriously ill with indigestion, with fermentation, showed excessive vomiting, hyperpyrexia, symptoms of irritation of the central nervous system, prostration and collapse, it was advisable to repeat the initial catharsis and withhold food for twelve hours if the condition of the baby warranted it. It was seldom advisable to give coal-tar products to infants to reduce the temperature. It was useless to give drugs by enema. Morphine subcutaneously might be necessary and bromide of soda might be given for restlessness in doses of five to ten grains. Alcohol was contraindicated when these conditions were associated with vasomotor paralysis and lowering of blood pressure Strychnia was in general the most useful of stimulants, while caffein and camphor were the best quick stimulants.

Experiments with Malt Soup for Institution Marasmus.—Dr. Thomas S. Southworth of New York presented this communication in which he stated that not many months ago he was called upon to assume control of wards containing a considerable number of bottle-fed institutional infants and found himself confronted with the problem of improving their nutrition. The stools of the majority were white and green in color and the infants were losing weight. Careful adjustment of the usual formulas had no appreciable influence and it became evident that it would be impossible to wait the results of further adjustments. Some plan had to be adopted to cut short the losses in weight. Malt soup was selected as offering greater promise of producing results than any other article of diet. No attempt was made to follow stock directions, but the milk content of the malt soup mixtures was adapted to the individual requirements of the infants. The purpose was to substitute for the milk sugar, and possibly barley water of the infants' formulas, carbohydrates in the form of the more absorbable dextrine and maltose contained in the malt soup extract. together with its usual accompaniment of boiled wheat starch for its recognized protective action. Their procedure was to use for each infant the number of ounces of milk or top milk which it would properly receive in an ordinary suitable formula, to add the requisite amount of water and then one teaspoonful each of malt soup extract and wheat flour for approximately each ten ounces of the total food. The mixture was brought slowly to a boil to gelatinize the starch and was then strained, cooled and bottled. In private practice it was often well to cook the mixture for thirty minutes. The malt soup mixtures proved a life saver, or, at least, a life prolonger, in nearly every instance. The prophecy made at the start that the stools would become smooth and brownish within twenty-four hours was, as a rule, fulfilled. Infants that seemed doomed promptly showed moderate gains in weight. Milk and cane sugar, both of which were disaccharides, at times overtaxed the upper part of the small intestine, with consequent disorganization of function, and the substitution for either of these single disaccharides of mixed carbohydrates, maltose, dextrose, and starch introduced new elements and conditions. Dextrin and starch were polysaccharides and were more slowly broken up. Both the chemical processes and the absorption were spread over a greater length of intestinal surface, bringing into play new ferments and fresh absorptive surfaces. This seemed to explain the action of the malt soup in these cases. Dr. Southworth said it had been his experience that malt soup neither caused nor aggravated vomiting, but rather that vomiting had ceased under its administration. In older children suffering from subacute or acute colitism no food equalled malt soup in its ability to nourish and prevent excessive loss of weight and emaciation. The writer stated that he wished to make it clear that he was not endorsing a single method to the exclusion of all others, but simply to relate a favorable experience with malt soup when breast milk was not available and to call attention to its utility at critical junctures. No claim was made that it would solve the whole vexed problem of mortality among institutional infants.

Recent Observations in the Use of the Soy Bean in Infant Feeding.—Dr. John F. Sinclair of Philadelphia after describing the plant and giving its history, stated that in this country it had been used largely for fodder or to increase the fertility of the soil, but experiments in the Department of Agriculture showed that its uses might be greatly extended. In China and Japan the beans were used in many different ways for food and the oil was expressed for cooking, illuminating, and lubricating purposes. Dr. John Rurah of Baltimore had been the first to use it in this country, presenting his preliminary report in 1909. Dr. Sinclair had been experimenting with the soy bean for two years, first employing it because of its high protein and fat content as a weak gruel to replace barley water, tea, and other liquids in gastrointestinal disturbances in an effort to check the losses in weight which occurred so frequently. In this it had proved most efficient. He had used the bean in 74 cases in the wards of the Babies' Hospital of Philadelphia during the past two summers. All the babies were under three years of age and were ill with summer diarrhea. Thirty-four were diagnosed as gastroenteritis, 28 enteritis, and 12 ileocolitis. In 28 cases the condition of the patient on admission was noted as "bad" or "dying," while in 36 it was recorded as "fair" or "good." In this series of 74 cases there were 19 deaths, 11 cases unimproved, and 44 babies did well. Some of the babies gained, as evidenced by improvement in their general condition, character of their stools, and increase in weight. Twenty-eight of the 44 cases gained in weight while in the hospital. Of the 11 cases that showed no improvement all but 2 were fed too short a time to permit of the drawing of a satisfactory conclusion. In no instance had any bad result been noted from the use of the soy bean. Their experience with the soy bean and a careful study of their cases led them unhesitatingly to urge its usefulness in the treatment of summer diarrhea, in various intestinal disturbances, and in marasmus. It was well borne, readily digested and by reason of its fat and protein content furnished the necessary pabulum to nourish the sick infant.

Dr. Irving M. Snow of Buffalo believed that disturbances of digestion in infancy were more often due to congenital weakness of constitution, disturbed function or metabolism than to infection or organic changes. Some babies were made worse by injurious treatment, abuse of laxatives, etc., which certainly emptied the intestine, but which might cause vomiting, irritation, hypersecretion of mucus and rapid emaciation. Especially dangerous was the employment of long and frequent periods of starvation on tea, water, or thin cereal gruel. Six to twelve hours was a sufficiently long period of starvation unless fever, vomiting, and diarrhea were unusually persistent. Albumen, milk, and dextromaltose were of high nutritive value; they were free from salt and fermentable whey and seldom caused vomiting or frequent stools. A thin, delicate baby might thus be given a suitable food. Human milk was the best of all curative foods and should be early tried in bad cases of food vomiting, and persistent diarrhea which resisted the usual diets. Even a few ounces daily would arrest emaciation and aid in the digestion of other food mixtures. In treating a baby with serious disturbance of nutrition Dr. Snow advised patience, the use of well-tried foods and the avoidance of too many changes.

Dr. Douglas P. Arnold of Buffalo said that there was no better way of dealing with disturbances of digestion than by preventing them and it could not be too frequently emphasized that the best way to do this was by breast feeding. Of course they could not rely on breast milk for older children. If Finkelstein's classification for alimentary disturbances was well worked out he thought they could treat these cases better.

Dr. Norris G. Orchard of Rochester said he questioned whether in Dr. Southworth's experiment the malt soup stood alone in having effected such a change in the character of the infant's stools. It was rare to observe such sudden changes in infants so perilously near the stage of inanition as described by the reader. It was difficult to picture in such infants any part of the intestinal tract not more or less profoundly diseased or at least lessened in tone so that the discussion as to their permeability by certain sugars or their absorption was based on rather uncertain grounds. Might it not be that the value of the malt soup lay in the combination of maltose, salts, nitrogen, and nitrogen containing compounds and to the variety of dextrines and closely allied substances as suggested by Howland? As regarded the non-production of vomiting, their experience had been quite the contrary so that vomiting had been considered a well-defined contraindication to the use of malt soup. Possibly this was due to faulty preparation or administration. More statistical data in this series would have been helpful. However, Dr. Southworth was to be congratulated that in his difficult branch of work, he had been able to achieve such satisfactory results.

Dr. Carl G. Leo-Wolf of Buffalo said he had been using soy bean ever since Dr. Ruhräh had called attention to it. He had used it in about 100 cases in private and dispensary practice where one was likely to get better results than in hospital work. In some cases in which the infants were getting proper mixtures but the limit of starch tolerance had been reached, he had given soy bean with good results. Another use to which they had put this food was to give it to nursing mothers; used in this way it had been a great boon to poor mothers during the past winter. From his experience he believed that in the soy bean they had food that had a great future and would be a great help in infant feeding.

Dr. George Dow Scott spoke of the slight causes that served to upset the equilibrium of the nervous child and called attention to the fact that other factors such as intervals between feeding and general hygienic conditions entered into these digestive disturbances as etiological factors. The reader of the paper on the soy bean did not say why they should give up wine and whey; he had obtained good results with them. Why could they not use split pea or lima bean soup added to the food formula?

Dr. Morse of Boston said he had been feeling more and more how isolated they were in Boston. He did not think that the speakers had entered exactly into the point of view of infant feeding that was held in Boston. Their endeavor was to try to find the cause of the disturbance of the digestion in the baby, and having determined the cause to give the food best suited to that individual baby's digestive power. They thought they could fit the different elements of the food to the needs of the infant by using percentages in older children; they used the calories and regulated them as carefully as they regulated the percentages in the infants, and hence they did not use stock methods of treatment. What he wished to give was a point of view and not a statement, a point of view broad enough to enable them to take in anything and to leave out anything they found to be wrong, but always to view the case from the standpoint of etiology.

Can Pneumonia in Children be Aborted?—Dr. T. Wood Clarke of Utica said that in spite of the investigations of a Cole and a Lamar, of Cruikshank, and of many others, pneumonia remained today as it was in the Middle Ages, a self-limited fever which must run its course. In the present state of our knowledge one was justified in following any signpost which might seem to indicate a possible road to a specific medication of pneumonia. It was for this reason that he related his experience in Utica during the past two years which, though suggestive, was not convincing. He was called to see a case of pneumonia in a child where masterly inactivity was indicated but where he knew a placebo must be given. Having some hexamethylenamine with him he decided that this would be as good as anything, and it might have some beneficial influence by excreting into the alveoli. He left a mixture containing two grains to the dram, a teaspoonful to be administered every two hours. The results were astonishing and he determined to try this agent again. After citing two typical cases Dr. Clark said that during the past two years in every case of lobarpneumonia or bronchopneumonia he had pushed this agent to the limit and with but one exception the results had been gratifying. In every one of the thirty-odd cases of pneumonia in children in which he had used this drug, the temperature had begun to drop within a few hours and in from twenty-four to forty-eight hours the patient was well. His early experience had convinced him that the use of this drug early in the disease had in a number of instances shortened the attack and he believed that the physicians of Utica and Central New York were converted to the idea that they were no longer justified in relying on "masterly inactivity" in pneumonia in children. He hoped that his confreres with large hospital services would give this drug a tryout.

Nuts and Fruits: Their Value in the Diet of Children.—Dr. George Dow Scott of New York said that among the laity there was a firm conviction that nuts gave rise to indigestion and fruits caused hyperacidity. To some the knowledge that nuts were highly nutritious was new. Nuts, however, contained water, protein, fat, sugar, starch, crude fiber, and ash in large proportions. Each kind of nut had its particular caloric value. Dry nuts were very high in nutritive value and contained more fat than any vegetable substance known. In nutritive value nut butters were far above ordinary cream butter. Dr. Scott had given nuts to children as a substitute for meat because of the nutritive value in intestinal fermentation. The discomfort of eating nuts was due to faulty mastication and to the erroneous habit of giving them to children after a hearty meal, between meals, or late at night, whereas they should form an integral part of the meal. Probably nut protein was not as easily digested as meat protein on account of the water content of 3 to 5 per cent in nuts against 50 to 70 per cent in meats. It was, therefore, fair to assume that the finer nuts were divided, chopped and mashed, the more rapid would be their digestibility. Salt did not make nut food more digestible. Mothers should understand the food value of nuts better, giving a variety of nuts to suit the individual child, but it must be understood that they were given as an addition to the diet. After weaning the child, nut butter should be cautiously given. Such butters should be more carefully prepared than those for older children. The nut kernels were pounded in a nut mill until of a thick, creamy consistency, and strained through two layers of clean boiled muslin or fine wire sieve. Fruit juice or finely cut or mashed fruit should then be adden. The stools should then be watched for undigested particles of nuts or any chemical disarrangement as diarrhea, duodenitis, or enterocolitis. If the butter agreed, the quantity should be gradually increased, care being taken to avoid overtaxing the child's stomach or digestive capacity. In the constipation of infants, nuts formed a valuable aid as a lubricant on account of their oils, but they acted as irritants because of the large amount of refuse which they left. Fruits were given to infants because they were paletable, refreshing, nutritive, and because of their salts, their diuretic, laxative, tonic and antiscorbutic action. In scurvy and other digestive conditions, the fruit juices were almost a panacea on account of their antiscorbutic qualities. In conclusion, Dr. Scott said that the nutritive qualities of fruits and nuts were not to be depreciated; the foods were not to be given to the child as a pleasurable and luscious appetizer only, but as a food in addition to the general diet, stimulating, nourishing, and exhilarating it to a stronger mental and physical existence. Dr. Scott presented tables showing the percentages of food elements in the different varieties of nuts and foods made from nuts and compared them with other foods.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Respiratory System

Under Charge of

W. C. HOLLOPETER, A.M , M D.

Professor of Pediatrics, Medico-Chirurgical College, Philadelphia

Pyloric Obstruction in Infants.—(Brit. Med. Jour., May 10, 1915.) W. A. Downes (Jour. Amer. Med. Asso., June 27, 1914) records his experience of 22 cases of pyloric obstruction in infants which have come under his care; 17 were males and 5 females; 18 were breast-fed entirely, 2 partly breast-fed, and 2 bottle-fed. In 14 cases the patient was the first baby, in 4 the second, in 2 the third, and in 2 the fourth. The symptoms appeared in from three days to seven weeks after birth, and in every case vomiting was the first symptom. Constipation was marked in every case; except in 4 or 5 cases the babies were emaciated, and in all there were the characteristic peristaltic waves of the stomach, and the pyloric tumor was present. Beginning with the eighth case aspiration was a routine measure, and in each stomach from 1-2 oz. to 4 oz. retention three hours after feeding was regularly found. The operation showed the pyloric tumor without other lesions or malformations. With regard to the operation, Downes says: "Ether should be the anesthetic used. The abdominal incision should be from 1-2 in. to 3-4 in. to the left of the median line. The reasons for this are twofold. In the first place, there is so little subcutaneous tissue in these babies that there is difficulty in obtaining union in the median wound, whereas the incision through the rectus muscle heals much more readily. Many post-operative deaths have followed evisceration resulting from nonunion in these cases. The second reason for placing the incision to the left of the median line is the avoidance of the round ligament of the liver. At necropsy in one of our fatal cases a large hemorrhage was found just where the needle used in closing the abdominal cavity had punctured this ligament. A partial pyloroplasty performed in some of these cases consisted in making an incision 1 in. long through the peritoneum and circular muscle fibre down to the mucosa. The edges of the wound gaped widely and the mucosa protruded. No effort was made to cover or close the incision, which immediately relieved the obstruction. Gastro-enterostomy should be the operation of choice, however, where the condition of the child is even fair, and the partial pyloroplasty be reserved for cases where haste is the first need. It involves a risk to the mucosa and its future is uncertain. The after-care is extremely important, and much depends on the judicious use of stimulants, and the proper use of fluids by hypodermoclysis and the Murphy drip, though these are not necessary when the patient is operated on when in good condition. Downes sums up the results of his experience in the following conclusions: "1. Hypertrophic pyloric stenosis is congenital to the extent that there is an increase in the thickness of the circular muscle fibres at the pylorus. The presence of this thickened muscle fibre reduces the lumen of the pylorus, and therefore the stomach, in order to empty itself, contracts more forcibly than normal. This abnormal contraction soon causes the mucous membrane to become thickened and oedematous, and to assume a more or less spiral arrangement as it passes through the narrowed pyloric channel of from 1-2 in. to 3-4 in. The result is a valvular action, which gradually produces complete closure of the pylorus. The question as to whether or not the pylorus will admit a probe or catheter at operation or necropsy is of little consequence when weighed against the clinical evidence of complete obstruction. 2. There can be no doubt that there is sufficient time between the onset of symptoms and the appearance of the signs of complete obstruction for careful observation and the carrying out of any medical measures likely to prove of benefit, provided, of course, that the early symptoms have been properly interpreted. The fear, however, that the condition may have existed longer than has been suspected, and that the vitality of the baby is not so good as appearances would lead us to believe, makes me feel that operation is indicated in every case of hypertrophic stenosis as soon as the diagnosis is made. Should operation in good condition suffer little or no shock, their convalescence is straightforward, and they are at once restored to normal health."

Congenital Tuberculosis.—(Brit. Med. Jour., May 10, 1915). Continuing a piece of work published in 1908, M. Pehu and J. Chalier (Arch. de med. des enfants, Paris, 1904, xvii) have brought up to date their analysis of all the recorded cases of congenital tuberculosis. They give a brief account of the conditions that must be satisfied before any case of infantile tuberculosis can be accepted as congenital. Both the mother and the child must have been submitted to infection; it must have been proved that in each the lesions were due to infection with Koch's bacillus; the infant must have been kept away from the mother after birth, in order that no opportunity for post-natal infection by the mother should have been afforded. Obviously, it is not necessary that delivery should have taken place before the death of the mother. As a rule, there are well marked tuberculous lesions to be seen in the organs of the infected fetus or infant; but several cases have been recorded in which microscopic lesions were not found, although the fetal blood contained virulent tubercle bacilli, no doubt in consequence of the occurrence of a terminal miliary tuberculosis in the mother. It is probable that tuberculosis of the placenta does not occur till the fourth month of pregnancy. Schmorl has insisted on the difficulty that may be met with in finding the microscopical evidence of the placental infection—as many as 20,000 microscopic sections may have to be examined before the tuberculous lesion is found. In any case it appears that tuberculosis of the placenta is quite common in tuberculous mothers; Lehman states that it occurs in 46 per cent of them. The authors conclude that at the present time only 51 unexceptionable cases of congenital tuberculosis have been published; all have occurred in mothers who have exhibited a grave exacerbation of their tuberculosis during the last months or days of pregnancy, and it is plausible to assume that they all have had an acute generalized tuberculosis. The authors have come to the conclusion that these cases afford no evidence for the alleged hereditary transmission of tuberculosis, but are the result of a transplacental heredocontagion. The father, therefore, plays no part in congenital tuberculosis.

Epidemic Annular Erythema.—(Brit. Med. Jour., April 24, 1915). L. Fonss (Ugeskrift for Laeger, Jan. 28, 1915) describes a small epidemic of annular erythema among patients whose ages ranged from 3 to 17 years. The first case was that of a girl, aged 9, who developed a rash which spread from the face to the trunk and limbs, being most prominent on the extensor aspect of the arms. On the face the rash was diffuse and most noticeable on the cheeks. On the arms it formed definite rings, several of which were confluent. These rings began as bright red spots, which spread outwards, the margins remaining hyperaemic, while the center of each ring rapidly became anaemic. There was occasional slight itching, but no desquamation or infiltration. The mouth, throat, glands, and joints were unaffected, and there were no catarrhal phenomena. The urine in one case contained much albumin, many red cells, some granular casts and epithelial cells and numerous crystals of uric acid. Altogether there were seven cases; all the patients came from the same district, three of them were sisters, and all had been in contact with others before the rash broke out. In one case it was confined to the face. The temperature was either normal or slightly raised. No diet or drug had been given which would account for the rash. The incubation period ranged from four to six days. Most of the patients had had measles and several had also had rubeola and varicella. The author is convinced that this epidemic had nothing to do with the ordinary contagious diseases of childhood, and he sees many resemblances between it and the erythemo infectiosum (megalerythema epidemicum) recently described by Feer. The incubation period of this disease is seven to fourteen days, there are no prodromal symptoms, and the rash appears on the face as a bright red and often much raised swelling. The rash spreads outwards, while the center of each area becomes pale and depressed. It is most prominent on the arms, and is represented on the trunk only by a marble-like coloration. It lasts a week and often more, and it is seldom accompanied by fever or other signs of general disturbance. It is often associated with glandular swelling in the neck. But though the rash, as observed in the author's cases, did not conform in every respect with that described by Feer as characteristic of trythema infectiosum, there are so many points of resemblance, in spite of differences in the incubation period, that the author is inclined to regard the two conditions as allied, if not identical.

Fulminating Cerebro-Spinal Fever.—(Brit. Med. Jour., April 24, 1915). Dr. H. H. Scott of Kingston, Jamaica, describes in the Interstate Medical Journal, St. Louis, 1914, xxi, No. 6, a number of cases of acute cerebro-spinal meningitis that ran so rapid a course as to merit the term of "fulminating," ending fatally in as few as eight hours from the onset. In such cases the patient, usually a child, goes to bed apparently in its normal state of health. During the night he becomes restless, wakes, feels ill, and vomits, usually without effort. Then he drops off to sleep again, or perhaps is restless for three or four hours, when he suddenly sits up and vomits again. More alarming symptoms rapidly ensue—convulsions with rigid limbs and head drawn back, and comas, soon followed by death. On inquiry it may appear that for a day or more before the onset described above the child may have had a cold in the head, loss of appetite, and a tendency to lie down instead of playing about as usual. The temperature rarely rises above 102 degrees F., the pulse rate is 90 or 100; the convulsions are not as a rule localized. Kernig's sign may or may not be present, and rigidity of the muscles at the back of the neck is nearly always present, though opisthotonos may be absent. The pupils are usually equal, and react normally unless there is deep coma. In cases that do not end fatally, vomiting, convulsions, and headache are observed, but the stage of coma is not reached, and recovery may be very rapid. The cerebro-spinal fluid obtained by lumbar puncture is clear, or faintly opalescent and iridescent, giving only a faint albumin reaction. It contains mononuclear leucocytes and a relatively large number of extracellular meningococci. If the fluid is turbid the proportion of polymorphs is raised. Occasionally Scott has seen a slight herpetic eruption around the mouth, but no other rash. In one family of seven children four died of this hyperacute cerebro-spinal meningitis in one day; a fifth was attacked next day but recovered, while a sixth, though harboring the organism in the porterior nares, showed no symptoms.

Miscellaneous Abstracts

Weights and Measurements of Infants and Children.—Dr. Rowland G. Freeman (Amer. Jour. Obs. and Dis Child.). While believing that standard weight charts are an absolute disadvantage when given to a family there could be no question but that a physician feeding a baby should have certain standards in mind, although each baby should supply a standard of its own. While most of us have the care of a considerable number of children under good conditions, where the feeding can be, at least during the first years, absolutely controlled, where the exposure to fresh air, the amount of exercise, the amount of rest, and the character of the clothing are all supervised, we have had little definite knowledge as to whether the results obtained for these children were commensurate with the care that was given them. We know in a general way that the mortality of these children is much less than that of children in general. I believe the mortality for well-cared-for babies during the first year of life to be not more than one-half of 1 per cent, but of this fact we have no definite data, but of 120 consecutive cases in private practice that I have tabulated not one died during the first year. There have been accumulated a considerable number of weights and measurements of school children in the United States, but the only data for children in private practice are those of W. Camerer (Yahrbuch fur Kinderheilkunde, Vol. 53, 1901, p. 381. It therefore seemed of interest to make an average weight chart of 278 cases in private practice, as well as a chart showing their measurements, and in order to get definite data I measured and weighed 1000 children for comparison in the Roman Catholic orphan asylums of New York, about 500 boys and 500 girls. These institutions are situated on a high bluff overlooking the Hudson and are modern and sanitary and the children are living under very good conditions. The first chart shows the weight of the 120 well-cared-for children compared with that of institution children. It is noticed that there is considerable difference after the first month. The general average of weights taken from the different editions of Dr. Holt's book were also taken for comparison and these too fell below the well-cared-for children. The difference between breast-fed and artificially fed children was also shown. The breast-fed children showed greater weight throughout the first nine months while the artificially fed kept fairly below. The well-cared-for children were almost all artificially fed after the first month, so that the American method of feeding children seems to compare favorably with those advocated in Germany. The second chart shows a comparison of the measurements of 120 babies represented on the first chart as compared with the measurements of 500 institution children and as compared with the average measurements as given by Dr. Holt. The behaviour of these children after the first year is shown by the third and fourth charts. It is noticeable that while from the second to the fourth year the orphan asylum children average nearly as much as mine, these groups were small, and most of the institution children were much older. It is an evidence of the excellent care given these children that they average a quarter to a half pound heavier than the 69,000 school children. Both of these groups from six years on are well below the well-cared-for children and at twelve years there is nearly 4 pounds difference in their weights. The last chart representing the measurements in length of the 278 well-cared-for children as compared with the 1000 orphan asylum children and the 98,000 school children shows the orphan asylum children again average somewhat taller than the school children but are well below the well-cared-for children. This shows a surprising advantage of the well-cared-for child over the others at the twelfth year of 6 inches greater in height. In conclusion I would say that the children that are under good control so far as diet, rest, and exercise are concerned show a great advantage over the data at hand concerning other children both in weight and height during the first twelve years of life, and that at the twelfth year they surpass the average by 4 pounds in weight and 6 inches in height.

Liver Abscess in an Infant.—By C. Violet Turner (Brit. Jour. Child. Dis). The patient, a boy five weeks old, presented swelling of the abdomen and legs. Four days after birth jaundice set in and persisted for ten days. The cord separated on the fourteenth day and the scar healed in a week. Six days before admission, however, a spot had been noticed on the abdominal binder. Examination in the hospital showed the abdomen to be markedly distended, with dilatation of the superficial veins. There was edema of both legs and the scrotum; also of the lower abdomen and back.: The right lobe of the liver was markedly enlarged, the edge being felt at the umbilicus. The following night a temperature of 101 degrees F. was recorded. The next morning the abdominal distention and edema had become worse and the skin began to blister in various places. The child died the same afternoon. The autopsy showed an abscess of the right lobe of the liver containing two ounces of thick creamy pus. Cultures showed the presence of the colon bacillus and the streptococcus. The infection probably took place through the umbilicus, the facts that it did not separate for two weeks and that there was a spot on the abdominal binder six days before admission being rather significant.

Bronchopneumonic Pseudocroup.—Enrique Suner . (Jahrbuch. f. Kinderheil., Dec. 1914) gives the following clinical picture of bronchopneumonic pseudocroup: With the general symptoms of a pronchopneumonia there come on symptoms of laryngeal stenosis, dyspnea, lessened voice, inspiratory stridor, retraction of the intercostal spaces during inspiration, etc. These symptoms would lead one to diagnose diphtheritic laryngeal stenosis and to seek for membrane; but mouth nose and throat are free from any false membrane. After this stage comes on a condition of asphyxia. If intubation be performed there is a slight and temporary relief of the dyspnea but this soon passes away and a fatal termination generally occurs, with heart failure. Fever is always present. The duration of the disease varies from two to twenty days. The causes assigned for the condition have been diphtheria generally as a complication of measles, and pneumococcus and staphylococcus infections. In measles this condition is generally an aftermath combined with bronchopneumonia. Any form of infection that will lead to bronchopneumonia may end in pseudocroup. It results, rather from a certain disposition of the patient than from the kind of germ present. The inflammatory process in the deeper respiratory passages has some influence on the lining of the larynx, either by a spasm of the muscles and nerves, or through some mechanical factor. In some cases autopsy has demonstrated swollen bronchial glands at the hilus. Both lungs show lesions of bronchopneumonia with atalectaxic and emphysematous areas, and there is acute dilatation of the heart. Following measles the pseudomembrane in the lowest bronchial tubes contains Kiebs-Loffler bacilli. Diagnosis is made by the initial catarrh, absence of throat and nose membranes, association of bronchopneumonia with stenosis of the larynx, and bacteriological examination. The prognosis is always bad. The author gives two rules for the treatment: Use diphtheritic serum in all cases of measles followed by this complication; do not perform intubation or tracheotomy.

Mortality of Whooping Cough.—A. D'Espine analyses the statistics on the death rate of pertussis from various Swiss and foreign hospitals. In his own clinic, in a recent series of forty-six cases, the death rate was 8.6 per cent. The average ratio of deaths from pertussis total deaths in Switzerland in three decades 1881-1910 was 10.54 per 1,000. More deaths took place from this disease during the same period than from either diphtheria, measles, typhoid fever, or scarlatina. From examination of various other statistical data D'Espine points out that the mortality from whooping cough is still very high, often about twenty per cent, in the majority of large European hospitals. Cases of uncomplicated pertussis should not be sent to the hospitals unless no other course is possible, as is sometimes the case in orphan asylums, or unless the patient's home environment is distinctly unfavorable, as in crowded slum dwellings. Outdoor conditions, secured either by free ventilation, the use of open sheds, or treatment actually in the open air, is a necessity in the efficient management of pertussis cases. Hospital prophylaxis of the complications of the disease by means of isolation pavilions and previous detention in a "doubtful pavilion" provided with cells each containing a single bed and under the supervision of a carefully trained personnel, is also advisable.—N. Y. Medical Journal.

Bony Splinting in Cervical Pott's Disease.—Alexander Don calls attention (N. Y. Med. Jour.) to the anatomical difficulties connected with bony splinting of this region of the spine and suggests the following procedure. The spines of the vertebrae are exposed from below the seventh to above the second. A section of a rib of sufficient length to extend from the second to the seventh spines is removed by subperiosteal dissection. A hole is drilled in the wider end, large enough to fit over the spine of the seventh vertebrae, and the rib is adjusted over this with its convexity forward. It is then marked and cut across at the point which will let it just fit into the groove below the second vertebral spine. This end is fixed to the interspinous ligament by a strong suture passed through a small hole drilled in this end of the rib. The muscles and fascia are then closed and serve to hold the splint in place. When necessary the rib can be made long enough to be attached to the base of the skull instead of the second spine.

Chronic Pulmonary Tuberculosis in Infancy and Childhood.—D. B. Lees describes (N. Y. Med. Jour.) six areas of dullness over the apices of the upper and lower lobes which he regards as typical of pulmonary involvement. Dullness in these regions is equally typical and constant in infancy, childhood, and adult life, but it is only to be made out by the most painstaking and accurate percussion. Percussion should always be made with the patient in such a position as permits of full muscular relaxation; for the anterior chest the patient should be lying supine, while for the posterior he should be seated with his arms crossed and resting upon his knees. The percussion should be as light as possible and constitutes the most certain and valuable sign of pulmonary tuberculosis in infants and children, in whom there is no sputum, and who usually show none of the ordinary symptoms of tuberculous pulmonary disease. Valuable aid is rendered by properly taken X-ray photographs, which show small areas of impaired light transmission in the regions found to be dull, as well as fine lines of infiltration radiating from the hilus of the lung. But the X-ray photograph is not delicate enough to detect changes in the lungs at the very earliest time, when careful percussion will reveal dullness in one or more of the areas in which it is typical of tuberculosis. The finding of this dullness in the presence of bronchitis, or of the pulmonary affections associated with many of the infectious diseases should be regarded as an almost positive indication of tuberculous involvement.

Duodenal Ulcers in Infancy.—Five cases of duodenal ulcer in infants from one to five months old, seen within two years, are reported by B. S. Veeder (Amer. Jour. Med. Sci., 1914, cxlviii, 709) the diagnosis being confirmed at autopsy in three of these and made at that time in one. One case recovered. All the infants were under six months of age and marasmic. Three had had a fair start on breast milk, so that the degree of chronic nutritional disorder was out of proportion to the dietetic error. Vomiting was present in all five cases, marked in three, occasional in two, but reverse in one of these.

In one case it resembled the type occurring in pyloric obstruction. Peristaltic waves and tumor were absent. Massive hemorrhage was present in four cases. Severe collapse as a result of the hemorrhage occurred in two cases, being a minor factor in one but almost immediately fatal in the other. When there is no gross hemorrhage the doagnosis of duodenal ulcer cannot be made in an infant, since subjective symptoms are absent. The diagnostic significance of occult blood is questionable. The prognosis is unfavorable, largely on account of the age of the infants in whom the ulcers are most frequently found and the association of chronic nutritional disorders. The only definite indication for treatment is to place the infant under the best nutritional conditions, that is upon breast milk. If methods are found by which an ulcer can be recognized early, surgical treatment offers a theoretical possibility. It is unknown whether the relationship of the nutritional disorder to the duodenal ulcer is one of cause or result.

Observations of Wet-nurses.—Ch. Brodsky (Arch. f. Kinderheil., Bd. lxiii, Heft. iii-iv, 1914) has made a careful study of the effects on the mammary gland and its secretions of the application of more than one child to the breasts of a single wet-nurse. This study was made in the Infants' Home at Zurich, on seventeen women. All of them were healthy and were given a Wassermann test before observation. The various observations are carefully tabulated with reference to the milk yield of each woman, and to comparison of the various women. It has long been known that a mother can suckle twins as well as one child. How far this increase of milk can be carried by applying other children to the breasts was to be determined. The secretion of milk is reflexly stimulated by suckling; the more energetically the stimulation works the greater will be the supply of milk. By the use of the breast pump the secretion can be kept up for more months without the child nursing. The duration of lactation appears to be unlimited. Hottentots and Malays have nursed children even after becoming grandmothers. The influence that menstruation has on the supply of milk is also studied by the author. With each nurse the child was applied to the breast five or six times daily, and after each nursing the breast pump was used to empty the breast. The women had ordinary diet to which were added milk, cocoa, tea, and a bottle of beer daily. They did housework, cooking, washing and ironing. The quantity of milk in some cases became doubled after nursing a second child. In a twenty-five-year old primapara observed the largest quantity of milk given was 5400 grams, after nursing five children. The largest amount obtained by pumping was 3420 grams on the 18th day after delivery, two children being nursed. On the first day of menstruation the amount of milk is smaller, gradually increasing up to the end of menstruation.

Chronic Tuberculosis in Childhood.—Clive Riviere says that chronic pulmonary tuberculosis in infancy or childhood is nothing more than a curiosity, but he agrees with the preceding author that the best method for its early diagnosis lies in the demonstration of the typical dull areas by exceedingly light percussion. Riviere holds the common thoracic lesion in tuberculosis of infancy and childhood to be an involvement of the tracheobronchial lymph glands. Diagnosis of this lesion rests upon the demonstration of interscapular dullness and presence of a shadow in radiographs. Riviere's experience leads him to the conclusion that, irrespective of whether this glandular involvement is right or left sided, or both, the area of dullness is to be found on the right side only. This is explained by the fact that it is believed to be due, not to the presence of the enlarged glands directly, but to a deficient aeration of the lung tissue from pressure of the glands on the right pulmonary artery which leads to congestion of the lungs. The typical area of dullness extends from the first to the sixth, seventh, or even to the eighth dorsal vertebrae and outward convexly from the middle line for from two to three inches. In these cases there may also occasionally be found some of the typical areas of dullness described by Lees as indicative of pulmonary involvement, but the characteristic feature, even when these are present, is total absence of changes in the respiratory sounds and of rales. The interscapular dull area, indicative of glandular involvement, shows a certain amount of variation in size in the different phases of respiration.

Treatment and Prophylaxis of Whooping Cough, Based on the Bordet-Gengou Etiology.—Dr. E. Mather Sill's experience with the vaccine had been limited to sixty or seventy cases; in the matter of prophylaxis it would be of greatest value. As a prophylactic he had employed it in only ten cases, but in none had the disease developed. In treating whooping cough, he had not, in the beginning, paid so much attention to the age of the child as to the frequency and severity of the paroxysms. His doses were from 50,000,000 to 100,000,000; so that the young infants received a proportionately larger dose than older children, and it seemed to him that he obtained better results in these cases. The average time for a cure in his cases, after vaccine treatment was begun, had been from three to four weeks. He did not consider the vaccine a specific for the disease, but it was a great addition to their armamentarium in its treatment; in many cases diminishing the severity of the paroxysms and shortening the course of the disease to a greater extent than was possible with drugs.

Dr. Alfred F. Hess, about a year ago, had had experience with the vaccine both as a prophylactic and a curative. The cases cited by Dr. Luttinger were ambulatory cases. The great advantage which he himself had had was that his cases occurred in an epidemic in an infant asylum, and were not ambulatory. He was thus enabled to have complete control of the cases to the end. Another advantage was that in all probability, all the cases were due to the same type of bacillus. In the third place, no other medication was employed, while the conditions were the same for all the children. Fourth, it was possible to know just when the disease began, the very first day. Four different vaccines were employed, one of them being autogenous. In all, eighty-five children were treated, from one to five years in age. The vaccine treatment was begun early—sometimes on the second or third day—and two or three doses, of from 100,000,000 to 200,000,000, were usually given. It was not observed that the vaccine appreciably lessened the paroxysms either in number or violence. The epidemic was not particularly severe. There were altogether 400 children in the institution, and the vaccine was administered prophylactically to 244 of them—in every instance before there was any sign of the disease. Of the 244, twenty developed the disease. This seemed a fair result. It was scarcely to be expected that the vaccine would be of value as a curative, for in no disease was vaccine of much service in the actual treatment.—N. Y. Medical Journal.

Significance of the von Pirquet Test.—Discussing this, T. Frazer (Med. Rec., Jan. 9, 1915) says (1) that a positive cutaneous reaction is less frequent in children than it was once thought to be, the high percentage of reactions obtained being due to the application of the test chiefly to infected children of the poorer classes and (2) that therefore a positive reaction is of greater significance than it is commonly supposed to be. (3) That while there is an increasing percentage of reactions with years, and a corresponding decrease in the value of the reaction, the view usually held that the reaction has significance only during the first two or three years of life is not borne out by recent figures, and that we should be suspicious of a reaction occurring up to the age of ten. (4) That annual tests be instituted in the effort to detect early infection, and that, bearing in mind the fact that many if not most cases of clinical tuberculosis in later years are due to renewed activity of old foci, we should seek by proper means to prevent the development of "infection" into "disease." (5) That a negative reaction, negative or repetition of the test, is valuable evidence of the absence of tuberculosis unless the child be suffering with advanced or acute disease, especially measles.

Prophylaxis of Tetanus.—(Berliner klinische Wochenschrift, Feb. 9, 1915) Ritter's article is in the nature of a proposition. He refers to Kreuter's statement that of every seven deaths among the wounded four have been due to tetanus. Otherwise stated 340 Bavarian soldiers have died from this malady since the war began. This number evidently includes only the milder wounded who could be sent home for treatment. The author personally has seen but one case at the western frontier, due to a grazing shot on the leg. The disease set in when the wound had nearly healed, and the patient was going about, and carried him off in two days, death having been due to spasm of the diaphragm. All the most successful remedies had been tested, save amputation, and authorities agree that this no longer has any status. Klapp believes that magnesium sulphate ought to save 80 per cent of those attacked, but recent figures do not show fulfillment of this claim. The author saw three successive recoveries in tetanus of moderate severity at the eastern frontier as a result of repeated lumbar puncture. Serum he uses to ease his conscience, but, like others, he cannot see undoubted benefit. The recourse to magnesium sulphate seems to be a proof of its untrustworthy character, although an intensive technique seems to show at times that it can save life unaided. The question of prevention now seems to be of much greater importance than that of cure. The author, as well as Czerny, has seen clean-cut cases of death from tetanus after seasonable prophylactic injections, and hence does not feel like depending on it alone. The most important prophylactic treatment is the local management of the wound. In certain suitable cases the wounds should be excised, but it is doubtless an error to suture them. Bier's hyperemia treatment for the production of arterial stasis may be tested in threatening wounds, but we have no knowledge of the relationship of stasis to tetanus infection. Another point remains for consideration—the use of strong antiseptics, as the cautery, boiling oil, etc., as in former centuries. The author believes that balsam of Peru would do as well here as any other antiseptic.

Are Institutions for Children Necessary?—H. D. Chapin (Jour. A. M., 1915, lxiv. 1) says that the stay of an infant in a hospital should be as short as possible. Unless the infant is quickly discharged after the acute symptoms have subsided, there is nearly always a slow but progressive loss of weight which bears an inverse ratio to the age, being especially marked under six months. If this atrophy gets beyond a certain point no change of environment or food will save the patient. Another danger consists in the spread of specific infections, such as diphtheria, pertussis and the exanthemata. Perhaps the greatest danger in keeping sick infants long together, comes from the ordinary ward infections. The mucous membranes usually bear the brunt of these infections. We may thus have rhinitis, pharyngitis, tonsillitis, otitis media, bronchitis, bronchopneumonia and vaginitis, the latter nearly always specific. The multiplication of infant's hospitals through the country should not be encouraged. As concerns the care of foundlings or abandoned infants in institutions, the plan of collecting babies in institutions should be abandoned, as, on the whole, doing more harm than good. Not only is the mortality under this system very high, but the surviving infants are rarely strong and healthy, in spite of good intentions and care in management. Large wards and large institutions are undesirable as far as the infant is concerned. Atrophic infants with chronic indigestion and malassimilation should never be treated in a hospital. A baby with marasmus will rarely live long in an institution. The best results are obtained by placing babies in individual homes in a district of the country noted for its healthful conditions, with constant attention to diet and hygiene on the part of a physician and nurse who are thoroughly familiar with this class of cases.—A. J. Obs. Dis. Chl.

Tonsillectomy in Children.—By Donald Balfour (Annals of Surgery). In the Mayo Clinic 1,654 patients were successfully operated on in the past five years, the following technique being employed: Good anesthesia is the first essential. A Whitehead mouth gag without the tongue depressor is fixed in place. The operator's index finger is introduced behind the posterior pillar of the tonsil, and by firm upward traction of the tonsil, the anterior pillar is put on the stretch; with blunt dissecting scissors or tissue forceps the pillar is then well freed from the anterior surface of the tonsil, care being taken not to break through the capsule. This enables the operator, by means of the supporting finger behind, to force the tonsil well forward and to engage it securely with the tenaculum. Ordinary uterine tenacula, although they have a tendency to tear into a soft, friable tonsil, when carefully manipulated are very satisfactory for this purpose. The tonsil, firmly held, is turned over, to expose the posterior pillar, and this is freed usually by blunt dissection. The superior pole is now enucleated from the superior tonsillar fossa and, in the majority of cases, the tonsil may then be rolled out of its bed without any more than blunt dissection. In very adherent glands one proceeds, first by well separating the pillars, with blunt dissection where possible, or by careful clasping with the dissecting scissors, until the tonsil is entirely freed from the pharyngeal wall.—N. Y. Medical Journal.

Surgery of Cleft Palate.—J. Berry (Surg., Gyn. and Obst., 1915, xx, 85) holds that the operation by median suture (a modification of Langenbeck's) is the only one which restores the palate to its natural condition. Narrow clefts, especially if limited to the soft palate, can be operated on with advantage by this method within the first few months of life. The common single or double complete cleft, associated with harelip, should be treated by closure of the harelip in earliest infancy, the operation on the palate being postponed until the second or sometimes the third year. After suture of the harelip the cleft in the palate undergoes rapid spontaneous narrowing, and the development of the alveoli makes the arch higher. At and soon after birth the cleft is usually very wide and the palatine arch low.

To obtain the best results, according to T. W. Brophy (Surg., Gyn. and Obst., 1915, xx, 98), the operation should be performed in early infancy, preferably before the third month. Cutting or breaking the bones of the hard palate to secure union is an unnecessary procedure. Lateral incisions in the soft palate are unnecessary and should never be made for the following reasons: 1. The ascending palatine or the large branch of the posterior palatine artery is divided, thus causing unnecessary hemorrhage. 2. The blood supply to the palate which we so much need is in a great measure cut off. 3. A new field for infection is established. 4. The nerves are divided, and atrophy may result. 5. If the tensor palati muscle is completely divided it never reunites, and consequently an important factor of the palate is destroyed. 6. The tensor palati muscle by traction dilates the pharyngeal artifice of the Eustachian tube. If its function is destroyed defective hearing must ensue. 7. The scar tissue which forms following the incision makes a thick, clumsy palate without that flexibility and resiliency so essential to perfect function. 8. The palate is made shorter instead of longer as it may be made by dividing it from the posterior border of the horizontal plates of the palate bones and using lead plates and wire suturse to relieve tension. Finally, to attain the highest degree of success and to avoid infection, we should use sutures which cannot absorb secretions: horse-hair, silver wire, and lead plates. A cleft palate may be closed, but phonation—correct speech—is the supreme test of the surgeon's work.—A. J. of O. Dis. Children.

BOOK REVIEWS

Old Age, Its Couse and Prevention.—By Sanford Bennett. Published by The Physical Culture Publishing Co., New York City; price $1.00.

This book is written by a member of the laity who claims to have grown young at seventy. It is profously illustrated, and several of the photographs of the author reproduced in this work tend to prove his assertion. He claims to have been a physically old man at the age of fifty, with a bald head and sunken cheeks, drawn and haggard expression, backed up by thirty years of chronic dyspepsia, catarrh of the stomach and periodic attacks of rheumatism. His family history shows his progenitors to have been short-lived people, always "taking something" to hold on to the thread of life. He claims when at fifty he was worried and worn out with financial cases, and suffering from lack of exercise and hurried meals with "no time to spare," he collapsed. A month's enforced rest gave him time to think over the discouraging situation, and he worked up to the realization that he was a fit subject for "Osler's Chloroform Treatment." He thereupon made up his mind to change his mode of life, and he began a system of exercises and ten years later found that he was growing younger. He is satisfied that his physical rejuvination at seventy-two is not due to hereditary advantage, favorable environments or physical peculiarity. He holds that it is due either to some method of life or careful dieting.

In this book the author outlines a system of exercises and dieting which are based on sound reasoning. This little book contains among other things various dumb-bell exercises for developing the regions of the body. It is profusely illustrated and a very readable book written by a member of the laity in such language that the ordinary layman can thoroughly appreciate it.

Surgery of the Blood Vessels.—By J. Shelton Horsley, M.D., F.A. C.S., Surgeon-in-Chorge of St. Elizabeth's Hospital, Richmond, Va.; founder and fellow of the American College of Surgeons; Ex-President of the Richmond Academy of Medicine and Surgery; member of Southern Surgical and Gynecological Association, etc. Illustrated with 89 cuts and engravings; 300 pages, cloth bindings, price $4.00. C. V. Mosby Company, St. Louis.

Murphy of Chicago and Matas of New Orleans were the first in this country to do blood-vessel surgery. Crile of Cleveland, and Halstead, of John Hopkins, have also done considerable work in surgery of the blood-vessels. The author's aim in bringing forth this volume is to present the scientific and the laboratory features of vascular surgery and particularly its practical aspects which may be of interest both to the surgeon and general practitioner. Therefore the treatment of hemorrhage, pathologic and traumatic, and such subjects as aneurisms, thrombosis and embolism, congenital nevi, varicose veins, and hemorrhoids are described as well as the transfusion of blood. The author reports some interesting personal experiences and original research. His methods of end-to-end suture of blood vessels, of transfusion of blood, of lateral suture of blood vessels, of suturing arteriovenous aneurisms, of making an Eck fistula, of transplantation of the anterior temporal artery, and of resection or transplantation of intestine after embolism of the mesenteric arteries are described in considerable detail. In the preparation of the chapters on the history of blood vessel surgery and of transfusion, the author has made an effort to follow the chronologic order and references have been given only when the literature was quite recent or where for some other reason it seemed advisable. This is an original contribution to blood vessel surgery as well as a valuable addition to surgical literature.

PEDIATRICS

Vol. XXVII JULY, 1915 .No. 7

EDITORIAL

CLOTHES AND OTHER THINGS

There has been so much clever advertising concerning hygienic underwear that there is a specific virtue against cold is certain weaves and meshes, and the tendency is toward the substitution of cottons and linens in place of woolen fabrics in winter. At least this appears to be the idea that patients have concerning their doctor's advice.

In the wide spread reaction against woolen underwear. flannel petticoats and warm stockings the ``new'' mother seems to think that her physician is prescribing a modern discovery for her child, instead of realizing that he is only trying to mitigate a very bad hygienic state of affairs in the overheated atmosphere in which his patient lives. Even though it be winter. it is impossible for anyone to be comfortable with wool next to their skin when an apartment or house is heated to a temperature between seventy and eighty. Physicians who advise light weight clothing that allows the heat of the body to pass off readily while in the house, and an exceedingly warm set of outer garments for outdoors, are simply adapting the clothing to conditions which they cannot overcome, and are infrequently laying up a stock of snuffles and coughs for the children in the spring and fall. Then, after furnace and steam heat is dispensed with, the general temperature of the house is much nearer that of the outdoor air, but it is likely to be at least twenty degrees cooler than what the child has been accustomed to in the winter weather.

One fallacy of the idea lies in the belief that if the lightweight undervests were sufficient in January they ought to be sufficient in May and October. These are months, as well as the summer months in the cold climates of the Adirondacks and Maine, when children should be provided with flannel and woolen garments to wear on days when the temperature is cold. We incline to think that the old adage of wool or half wool and half cotton undergarments for children up to two years of age is the most practical. Of course this requires an exception in the very warm weather of cities. Perspiration and prickly heat will occur with unpleasant consequences if an infant is too warmly clothed, but when one remembers the lack of exercise and the inability to get out of draughts, as well as the damp condition of the clothing which so often occurs one feels like warning mothers that the old-fashioned idea of the wollen binder and knitted socks may be safely carried out with very few judicious exceptions throughout infancy.

The hardening process which some advise is generally but an artificially applied prescription of common sense to the children of wealthy homes where there is nothing naturally hardening in the hot-house atmosphere. The majority of children, however, are brought up in town and country homes where the indoor heat is irregular, and often insufficient. They run in and out of doors freely, without the careful attention of wrapping up each portion of the body evenly. It is therefore, we believe, advisable that the body should be evenly clothed in warm flannel. Thus the child whose own heat is not used and preserved by warm underclothing is at a disadvantage in the first days of outdoor life, especially in the raw spring days. We would suggest that if at no other time warm underclothing is used, that it be on hand for country days, when indoor and outdoor temperature is alike raw.

It is impossible to advocate any one method of clothing for all children. The over steam-heated class, whose physicians prescribe well-advertised meshes of various fibres are but a small percentage of children. The main underlying principle is to teach a child to create its own heat, by exercise, rather than to depend upon artificial heat, and then to conserve that heat as the animals do by warm clothing. For the change of temperature during the passage from indoors to outdoors is not as perceptible when the child is surrounded by a layer of its own bodily heat that is not too easily radiated through the clothing.

There is a vast difference in children; some are so fullblooded that the slightest exercise causes them to perspire, and to readily catch cold if the changes are extreme; these should be lightly clothed, and especial care given to draughts. Others become blue and livid with cold, through poor circulation; these should be clothed in wool, or half wool and half cotton underclothing from wrists to ankles and wear merino stockings and warm overshoes in cold weather, so that they may waste no particle of their natural heat in warming the outer air.

The mother who swathes her year-old infant in flannel bands and shirts and jackets when the temperature is 95 degrees and wonders why it has prickly heat is as unwise, but no more so, than the mother who casts off the woolen band entirely all summer, regardless of cool mornings and sudden breezes and wonders why the child has diarrhea. As the wise woman told Tom De Willoughby, "the medjumer you are with children, the better.' So we advise very strongly from principle and experience that the majority of children summer and winter should have on hand moderately warm underclothing, to be used or not with discretion, according to the temperatures of their habitation, and that in cold weather they should help to equalize the difference between indoors and out, by the addition of warm outdoor garments, of which the woolen sweater is perhaps the most useful.

RELIEF IN NERVE PALSIES

After many years of despondency and darkness it would seem that many of the intractable cases of chronic invalidism in children are giving way before scientific progress in therapy.

For many years orthopedic surgeons have labored with chronic bone conditions and the results, often brilliant, have came to be the expected thing in this branch of pediatric therapy.

Lagging behind, but yet as full of interest, have been the muscular and bony deformities resulting from nerve tissue lesions. The many little patients with Erb's palsy, with facial palsy following otitis and anterior poliomyelitis, have been doomed to live with fragmentary and unhappy lives.

It is a signal of great promise that within the recent decade neurologists and surgeons have been working together to obviate these particularly chronic defects; and further, their efforts are commencing to be crowned with success.

Ballance and Stewart, Faure and Foret, Spiller and Frazier, Kennedy, Cushing, Clark and Taylor and others have now reported cases of obstinate and long-standing nerve palsies in which the patients have been cured by nerve anastomosis.

Kennedy first reported a successful cure of nerve anastomosis for a spasmodic tic. Frazier cured a case of facial palsy by grafting the distal stump of the facial nerve on the healthy stump of the spinal accessory, and more recently Clark and Taylor have done the same thing with the hypoglossal. In Erb's palsy promising results are looked for, and more recently Spiller has had some very encouraging results in anterior poliomelitis.

We feel persuaded that in nerve anastomosis a fruitful field of therapeutics has been opened up and that it only needs refinement in technique to literally make the dead limbs walk.

PYLORIC STENOSIS

To operate or not to operate in cases of pyloric stenosis that is the question. The numbers of those who advocate surgical measures and of those who recommend medical means are about equally divided between surgeons and physicians. Emmett Holt, writing in the Journal of American Medical Association of a comparatively recent date puts forward the view that in a large number of instances operative procedures are not only unnecessary but add another source of danger, but allows that in a relatively small number of cases surgical interference is indicated and should be undertaken promptly. Holt first supplies figures which various authors have compiled of cases treated by medical means only and that gives his own results. Of a series of 57 cases, 28 were treated by operation and 14 died; 29 were treated solely by medical means and 17 died. Holt states that the average of the latter list 55 per cent is about the average of all numbers recorded. Hutchison recorded 20 cases with two deaths and results quite as favorable have been obtained of medical measures, alone. Holt is of the opinion that physicians and surgeons do not appreciate to the full extent the values of their respective procedures.

Surgeons are too apt to exaggerate the utility of surgical measures, while physicians not infrequently fail to call in the surgeon's aid when such aid might result in the saving of life.

Holt, therefore, it would seem wisely recommends that when a child is holding his own with medical treatment, operation should be deferred. In most cases of this description a patient will generally do well and recover without any permanent damage and with no risk of recurrence. On the other hand, when a child is still vomiting and not putting on weight the services of the surgeon should be requisitioned at an early date. Downes' paper gives the results of 22 consecutive operations in his own practice in which 7 died. Downes was so greatly impressed with the successful results which follow on early operations that he advances the view that operation is indicated immediately after the diagnosis has been made.

The Practitioner, June, 1915, refers to these figures, points out that it is hard to reconcile the conflicting views of surgeons and physicians. It is difficult to come to a timely judicial decision with the merits of the surgeon's and physician's viewpoint. Perhaps, Holt stands on somewhat firmer ground when he says that to operate in every case is to ignore the fact that at the lowest estimate 50 per cent get well without operation and 80 as far as can be ascertained suffer no further trouble from the condition. Downes certainly seems to be going too far when he urges that operation should be undertaken in every case immediately after diagnosis. It would appear that mortality must be raised by such methods. The great point, after all, is that surgeons and physicians should co-operate more heartily.

CHOREA

The question as to whether chorea is of rheumatic origin is by no means decided. The positive evidence, however, in this direction appears to be convincing and the majority of the members of the medical profession are perhaps unanimous in thinking that so clear is the evidence in support of the view, that these nervous manifestations are a part of the rheumatic syndrome that unless conclusive proofs are brought to the contrary, rheumatism must be held responsible as the chief factor in the causation of chorea. Dr. Mary H. Williams, an inspector of schools in England, writing in the Lancet, June 19, 1915.

says that she has observed no case of chorea occurring in any but a rheumatic child and she discusses from the view urged by Professor Poncel that the ordinary type of chorea is often caused by the tubercle bacillus. F. J. Poynton writing in the special rheumatism number of American Medicine for June. 1915, says that chorea or St. Vitus' dance is generally rheumatic, nervousness, dropping things, headaches and jerky movements are early signs of the illness. A. M. Gossage writing in the same number says: "It is common to find that children with rheumatism are excessively excitable and emotionable." A careful examination of cases of chorea reveals the fact that over 50 per cent have either had rheumatism previous to the chorea. or are suffering from rheumatism at the same time or get rheumatism subsequently, provided one regards evidence of present or past cardiac inflammation as conclusive proof of rheumatic infection. Nowadays chorea is regarded as one of the manifestations of rheumatism and by some is regarded as a form of rheumatic in fection of the brain. For instance, Poynton and Gordon Holmes have described slight changes in the cerebral nerve cells, but in spite of this it seems more probable that its causation is toxic.

The affection is characterized not only by the irregular involuntary movements but also by certain mental symptoms and by definite musceultr weakness which in many cases is so great as to deserve the appellation of paralysis. Chorea does not respond very readily to treatment, or rather it is a very difficult condition to successfully treat and is much more common in girls than boys and a history of neurotic disorders in other members of the patient's family can be generally obtained. Still is authority for the statement that rheumatism itself is commoner amongst neurotic children than among ordinary ones.

A quiet, restful manner of living is always indicated for children suffering from chorea, and the same therapeutic remedies which are most efficacious in the treatment of rheumatism. But as said before drugs have little curative or remedial action on the course of the malady and the main hope for relief or cure is in a suitable manner of living.

PEDIATRICS

ORIGINAL ARTICLES

EUGENICS A FACTOR IN RACE BETTERMENT

BY J. WALLACE BEVERIDGE, M.D.
New York City

The term eugenics has recently been given a distinct meaning and has gradually developed into a vast comprehensive science. The history of nations shows the family has been the unit in which all government has had its conception.

Twenty-three hundred years ago Plato wrote at considerable length on the subject of creating a better race by more suitable marriages. The Chinese, prior to the time of Confucius, employed a system of rewards for the man that had accomplished in the community some act for the benefit of either his neighbor or his country, that he should have the choice of the most desirable girl in that community. This plan is still in existence among the Manchus. With the savage races of Australia, South America, Africa and some parts of Russia, the domesticity of the family is very pronounced.

A great deal of credence, I believe, should be given to the explanation of the decline of the various nations that have made history. It was due, not to the luxury in which a small per cent of the population lived, but to certain well defined human impulses, conditions which arose as a nation became more powerful, and as the desire of their rulers to conquer more territory became stronger. Young men were drafted into the army and were killed, leaving behind only the slaves, cowards and unfit to propagate the race. This is well illustrated in the rise and fall of the Roman Empire, Sparta and Venice, and in our time in a lesser extent Spain, France and England.

In the beginning of the great race of Romans they inhabited the Apennines. They were very independent and virile, tilled the earth, and created families, looking well after their children that they might follow in their footsteps. They increased in numbers and strength and began to expand. Leaders arose among them desirous of power for themselves. They instilled the love of conquest into the hearts of their brothers. Sending armies out into the world, they defeated little states, won many victories and became a great nation. The mothers of this race kept giving up their best to be killed in battle or to succumb to disease, until in time there were no best to send forth. Deterioration began, until finally the Senate passed bills giving bounties for marriage, and extra bounties for children. The Romans at last became a race descended from the slaves, infirm, maimed and cowards who were left behind to carry on the duties of domesticity. So when the Huns appeared Rome was already conquered and they had little difficulty in subjugating the great legions of weaklings the Roman Empire sent out to combat them.

Sparta presents an interesting condition to our modern government. The Spartans were ideal in their physical and mental development at the time of their glory. They gave the women an equal share with the men in the conduct of the government. The women accomplished some notable reforms for the country, but empty cradles followed this action and at the expiration of two generations the Spartan nation ceased to exist. The prosperity and advancement of a race or nation depend upon the individual and the family. This is well shown by examples in our time wherein nations that are dominant factors in the world's progress are showing a lessening of the virile strain of efficiency, as illustrated by France, England and Spain. The beginning of the deterioration of France began shortly after Napoleon's reign. Napoleon forgot, when he was endeavoring to conquer Europe, the great principle of eugenics. He took the best the country could give in young men, leaving only the aged and infirm to continue the propogation of the race. In one campaign alone, of an army of six hundred thousand men sent to subjugate the Germans and Russians only about 20,000 returned to France. Today we see the sad results in this one-time great nation of France showing a birth-rate lower than any other nation in the world, causing the requirements for admission to the army to be lowered five times in the last ten years. In England the conditions caused by colonial wars have caused a heavy drain upon the resources of the best blood. The standard of enlistment in the British army has been reduced five times in ten years. The deterioration of the race in England is causing serious thought and its greatest statesmen are endeavoring to devise some means of counteracting the evil results.

The question is, how can the efficiency of the individual be increased? The state provides wise laws to protect society against those who do wrong, but so far very little has been done in guarding individuals against each other in marriage.

Our Civil War cost us approximately a millon men. This great loss of virile men seemed to have very little effect upon our advancement, perhaps because the men and women who came here to start life anew from other countries possessed a spirit of determination and had much natural ability, thereby replacing to a great extent the men killed in war.

We have paid very little attention to the physical welfare of men and women about to marry. The first public official to direct attention toward health marriage was Governor Durban of Indiana. In his message of 1905 he said the State should exercise the right of preventing the contract of marriage between persons unfit to assume its obligations and particularly of such marriages as insure to propagation of defectives. California recently passed an act that no license should be issued to one insane or under the influence of drugs. A similar law was enacted in Indiana, preventing any epileptic, insane or mentally deficient person from marrying. New Jersey also possesses a statute wherein no person who has suffered from a transmissible disease is permitted to marry, unless accompanied by a certificate from two licensed physicians certifying he is cured. No insane, epileptic or mentally defective person can marry. In Michigan the law is very specific, with a fine of $500 to $1,000, or imprisonment for five years, or both, for either party contracting a marriage who has been afflicted with a social disease and not cured. In California every possible safeguard is employed to prevent the insane, epileptic, mentally deficient and habitual criminals from having children. A bill along these lines was recently introduced in the Legislature of Rhode Island.

The conditions which arise in this country, particularly wherein care should be exercised by the State in preventing or prohibiting individuals from marriage, either by civil or religious ceremony, are based entirely, to my mind, upon qualifications of health. We as a nation have overcome any race deterioration resulting from inter-marriage with defectives. The brightest and most capable of our country people migrate to the cities, leaving behind the unambitious and infirm members of the family. The New England States are a good example of a considerable part of the virile population leaving their homes and going to cities, or West. In some of those states, it is reported, there is more opium, morphine and alcohol consumed per capita than in any other section of the country, which is a symptom of degeneracy. The mentally unbalanced and diseased and those unfit for the daily battle of life have increased during the past ten years from 117 per 10,000 to 679 per 10,000 and the number of women to each man is seven to one. In our great cities, New York stands foremost. Here the competition is very strong, the battle of life most arduous, which is well indicated in the report from the Lunacy Commission of 1912:

"The great number and increase of insane are due, primarily, to heredity, only a small percentage is due to the transmissible diseases and alcoholism. The birthrate during 1912 for individuals having an income of $1,000 and over, has diminished 17.9 per cent below the birth-rate from five years previous. The death-rate of babies up to two years of age during 1912 increased 11.3 per cent from five years previous. There has been a well-defined tendency among the men and women that work for their living who get married and are normal and healthy to have as few children as possible, if any, especially among women who go daily to their occupation."

During the past few years our progress, perhaps, has not been so rapid. Now the question arises, is it possible to continue in a forward direction, or will we also arrive at a point where no further progress will be observable and then gradually retrograde? The invasion of this country by hundreds of thousands of immigrants each year is a matter of concern. The basis of the success of any nation is health, normal and mental poise, and a home the center of the family. In the recent statistics obtained at the large ports of entry, there has been observed an enormous increase in insanity, epilepsy, tuberculosis and transmissible diseases in those who find their way into this country. The percentage in the clinics of the large hospitals in New York, where nearly six hundred thousand patients are treated annually free, roughly speaking, is three foreigners to one American. In Chicago, about 2 to 1.

in Philadelphia 3 to 1, Boston 2 to 1, New Orleans 5 to 1, and San Francisco, Seattle and Tacoma 2 to 1. The mental status and the physical condition of the average immigrant are much below the average native American. The offspring from such sources is a distinct detriment to the state. Throughout this country a gradual decrease in the birth-rate has been noted, one of the causes of which, I believe, has a great bearing on the lowering of birth-rate. Industrial conditions during the past decade have greatly changed, and women are now occupying an equally responsible position in practically all walks of life, with the men. When a young man and woman who are both working marry the woman is often loath to give up her independence and settle down to a small weekly expenditure, so she continues in her position, but the entrance into the household of a baby compels the wife to retire for at least two years, and the added drain of another member taxes the earning capacity of the husband and ofttimes causes discontent in the woman. In such conditions children are not looked for as a blessing. Again, many intelligent women who are able to care for themselves do not think that a domestic existence would be as pleasant as their own bachelor life. As a woman becomes more intelligent and influential in the position she occupies, she forgets the great call of motherhood. Among the women who have incomes sufficient to supply all their needs the fascination of the theatre, bridge and social position create so many demands upon their time that babies are looked upon with disdain. We see women devoting their entire energy to the suffragette movement. If the same amount of intelligent endeavor were directed toward the upbuilding of the home and the directing of scorn upon the family that was childless, we soon would have a revival of the family circle.

Men are as much or more to blame than the women. Due either to ignorance, carelessness or lack of moral sense, they will rush into a marriage contract in a totally unfit physical condition. They have contracted diseases by means not recognized as legitimate and having taken a wife she is made to suffer, perhaps all the rest of the years of her life as a result of an unhappy marriage of this character.

When a man (or woman) is physically diseased from social transgressions, or suffers from tuberculosis, cancer, epilepsy, or is mentally unbalanced, he or she should not be permitted to marry.

Why should we not strive as a race for improved racial characteristics and scorn marriages that are deleterious? We should educate society to look down upon the parents who permit improper unions, just as we gaze with horror upon a leper. This nation needs babies healthy in body and in mind if we are to continue as a dominent factor in the world's progress.

25 East Sixtieth Street.

PULMONARY TUBERCULOSIS WITH LARYNGO-PHARYNGEAL STENOSIS: REPORT OF A CASE*

BY DUNNING S. WILSON, M.D.
Louisville, Kentucky

The following case not only seems sufficiently interesting to warrant detailed report, but so far as my experience extends it represents a rare early complication of pulmonary tuberculosis. Dr. C. B. Spalding, who is present, saw the patient, and if my description is inaccurate in any essential respect, he will be able to make the necessary corrections.

The patient was a boy, aged about sixteen years, who was primarily suffering from pulmonary tuberculosis, and secondarily from involvement of the larynx and pharynx. While of course there is nothing particularly unusual about that, the extraordinary feature was that the disease had progressed until adhesions between the base of the tongue and the epiglottis had finally reduced the aperture through the pharynx and the larynx to the esophagus to about the size of an ordinary lead pencil. It had become absolutely impossible for the boy to swallow, and liquids which he attempted to swallow instead of reaching the esophagus would be regurgitated either through the mouth or by way of the nose.

The physical condition of the patient had not become very markedly impaired, and until supervention of the extensive throat lesions he had been able to partake of nourishment regularly. The pulmonary lesions did not appear to be rapidly progressing, his temperature was only moderately elevated, he was able to walk about the most of the time; but his respiration was seriously impeded by the stenosis, and the whistling sound produced by his breathing could be heard for a considerable distance. The throat lesions progressed until deglutition became impossible, starvation was imminent, and the boy was nourished by the rectum for some time.

---

*Clinical report before the Society of Physicians and Surgeons, of Louisville, Kentucky, December, 1914.

The question naturally arose what, if anything, could be done for this patient, and perhaps I deserve censure for not earlier advising surgical intervention for the purpose of prolonging his life. Of course, surgery could have accomplished nothing toward arresting the pulmonary lesions. About this time Dr. C. B. Spalding and a throat specialist were asked to see the patient. I believe Dr. Spalding advised that an immediate tracheotomy be performed to enable the boy to get sufficient oxygen, and that a gastrostomy be also done so food could be introduced directly into the stomach. He believed surgery could be safely undertaken as the boy still showed fair signs of resistance. He was accordingly sent to the Sts. Mary and Elizabeth Hospital for operation, but death ensued about ten minutes before he was to be placed on the table.

I would like to ask if anyone present has seen a case in which the lesions of the throat had progressed to the extent described. The base of the tongue, the epiglottis, pharynx and larynx were incorporated in a mass of adhesions.

Some one has asked whether the patient might not have had syphilis. This was considered and a Wasserman test made which proved negative.

Discussion

Dr. J. R. Peabody: I have never seen a tuberculous throat lesion which had progressed until there was almost complete stenosis as occurred in the case reported. Ordinarily throat lesions occur only in advanced pulmonary tuberculosis, and usually the patient perishes before such marked throat lesions develop. Extensive involvement of the throat has oftentimes been observed in syphilis, but of course there is no reason why such complications should not occur in tuberculosis.

While tracheotomy might have enhanced the comfort of the patient, it would not have saved his life, and it is questionable whether the operation was advisable earlier than suggested. No local treatment could have prevented development of the throat lesions so far as we know.

Dr. H. Bronner: In several instances I have seen throat lesions in syphilis similar to those described by Dr. Wilson. In one such case seen in the Louisville Public Hospital, after a tracheotomy had been performed, a few doses of salvarsan caused prompt disappearance of the throat lesions. While the patient never entirely recovered his voice, he was able to eat, gained in weight, and is still living.

Possibly there was a mixed infection in the case reported.

Dr. C. B. Spaldng: This was one of the saddest cases that has ever come under my personal observation. Nothing more pathetic can be imagined than a young boy struggling for breath and practically starving to death at the same time. So far as the throat lesions were concerned, there can be little doubt that they were tuberculous. There was no new growth whatever, the tissues were cicatricial in character and resembled scar tissue resulting from an extensive burn.

My suggestion that tracheotomy and gastrostomy be performed was not with the idea of benefitting the throat lesions, but to prolong life and make it more bearable to the patient. When tuberculous lesions of the throat have become so extensive as shown in this case, the patient has absolutely no chance of recovery.

The parents were informed that the boy might not even leave the operating room alive, that we were simply going to give him a chance and try to make him more comfortable, and they fully understood that recovery was absolutely impossible. The boy had a pulse of about 90 and was asleep when I reached the hospital. While the operating room was being prepared, the nurse sent for me to come to the bedside immediately, and it was found that the patient had suddenly expired, apparently without waking. We have oftentimes heard it said that patients with throat tuberculosis invariably choke to death; that was untrue in this case; evidently the heart simply reached its limit and ceased to beat. It was perhaps fortunate for all concerned that death occurred as stated.

Dr. Wilson seems inclined to blame himself for not having suggested the earlier performance of tracheotomy and gastrostomy. The previous physical appearance of the patient did not correspond to the gravity of the local condition. He did not look like a patient in the last stages of pulmonary tuberculosis. No one had reason to suspect a few days previously that he would soon starve or choke to death, based upon his physical appearance, and Dr. Wilson was certainly justified in not recommending earlier surgical intervention.

Dr. D. S. Wilson: Of course, the possibility of syphilis in connection with tuberculosis occurred to us, but every effort to establish the diagnosis of syphilis resulted in failure. I have seen hundreds of cases of tuberculosis of all types, but never encountered a condition like this before. Usually the higher the lesion in the respiratory tract the more fatal it is, and pharyngeal tuberculosis is more quickly fatal than any other form. Throat involvement is almost invariably secondary to pulmonary lesions. Both the patient and the family understood the exact situation, they knew there was absolutely no chance of recovery, that the only thing we could do was to give the boy temporary relief.

The lesion suggested by consideration of this case is that it is unquestionably better under circumstances such as those cited to advise early tracheotomy and gastrostomy. In the majority of cases throat lesions occur in the last stages of pulmonary tuberculosis. I regret that operation was not advised earlier in this case.

Dr. S. J. Meyers: In reference to the Wasserman test which has been mentioned to determine the presence or absence of syphilis: A patient was recently sent to me from Nashville, Tennessee, with a history which suggested syphilis. A Wassermann test was made of the blood by one of the most competent laboratory men in the city, and he made a negative report. The patient in the meantime had developed nervous phenomena which were considered certainly syphilitic in origin. Dr. I. N. Bloom saw him and made a spinal puncture, and examination of the fluid showed Wassermann three-plus. This is mentioned merely to illustrate the meagre value of the blood test in one instance, and the great value of spinal puncture in another. Both these tests were made by competent pathologists. It is a frequent occurrence with the majority of us, that when we make a blood test and find it negative, we conclude the patient has not syphilis and dismiss him.

Dr. J. B. Richardson, Jr.: Is it not fact that if a patient has syphilis, and the Wasserman blood reaction is negative, after a course of iodide of potassium the Wasserman reaction oftentimes becomes positive?

Dr. H. Bronner: It is not unusual in syphilitic patients to find the blood negative to the Wassermann reaction, whereas the spinal fluid will be positive. This has been noticed particularly since we have been paying greater attention to lesions of the nervous system in syphilis. It is our routine practice to make a spinal puncture in all such cases.

Referring to the point made by Dr. Richardson: If a patient comes to us with a history of syphilis, even if a negative Wassermann is shown in several tests, and especially if there are any suspicious nervous symptoms, it is our practice to give a five weeks course of iodide of potassium. It has been found that frequently such a course of treatment acts as a provocative or sensitizes the Wassermann reaction, if placed upon a short course of mercurial treatment, or is given a small dose of salvarsan, the Wassermann will later be found strongly positive.

We should make a lumbar puncture in all suspected cases, especially where there are any nervous symptoms or evidence of arterial change. A few years ago it was the prevailing belief that arterial changes were always late manifestations of syphilis, but we know now that such theories are absurd. Quite recently I saw a patient with syphilis, where the initial lesion dated only three months previously, and yet undoubted arterial changes had occurred. Nervous and arterial lesions occur much earlier in syphilis than we have hitherto been inclined to believe. In many such cases, while the blood may be negative to the Wassermann reaction the spinal fluid may be positive and it is our duty to the patient to make a spinal puncture.

Dr. J. H. Simpson: In connection with early lesions produced by syphilis: I recently saw a patient who gave the history of having had a chancre six months previously. He had been given salvarsan and mercurial treatment in the interim, yet he presented choked disc of both eyes.

REPORT OF FORTY-SIX CASES OF INTUBATION*

BY O. W. CARPENTER, M.D.
Greenville, S. C.

*Read at meeting of South Carolina Medical Association, 1915.

There are certain conditions of laryngeal obstruction where the advantages of intubation or tracheotomy must be weighed, but in laryngeal diphtheria intubation is by far the operation of choice in the hands of an expert. It is one of the most difficult operations in surgery and requires a maximum amount of manual dexterity to be performed with gentleness.

One cannot become expert with cadaver and theoretical experience alone. Unless the operation is done quickly and gently it becomes one of the most brutal in surgery.

It's advantages are: (1) It can be rapidly performed. (2) It requires no anesthetic. (3) The parents' consent is readily procured. (4) Respiration is continued through natural channels. (5) Dangers of aspiration pneumonia and infection are reduced to a minimum. (6) No after treatment is necessary (7) I believe the pressure of a properly fitted hard rubber tube seldom causes ulceration and acts beneficially on the sub-glottic hyperplasia, which is present in many cases of laryngeal diphtheria.

Intubation should not be attempted by an inexperienced operator, the traumatism caused by repeated attempts to introduce the tube prolongs materially the retention of the tube. I do not believe that all chronic tube cases following diphtheria are based on traumatism, but I do believe that many of them are.

Indications for Intubation.—There are signals of danger and distress which should never be passed unheeded and which once recognized render the operation imperative. When the voice becomes toneless, and whispering and cough suppressed; when in addition, the dyspnoea becomes urgent, and the loud stridor of croup is heard both during inspiration and expiration; when there is marked recession at the base of the sternum and above the clavicles; and when all these symptoms cannot be relieved by emetics, it is certainly time to operate.

While we are not justified in waiting longer after these symptoms have appeared, it is even better when possible to operate earlier.

In infants and young and feeble subjects, the dyspnoea may not be sufficient to give rise to marked cyanosis or alarming symptoms of suffocation, nevertheless it may be sufficient to cause dangerous or even fatal exhaustion. In these cases it is our plain duty to operate earlier than when the patients are older, more rugged and more able to stand the exhaustion caused by difficult respiration.

Disadvantages of Intubation.—(1) An English writer, St. Clair Thompson, says that 25 per cent of intubations are followed by secondary tracheotomy. I do not believe that this is the experience of American operators.

(2) Forcing of the membrane into the trachea; this occurs very seldom.

(3) The tube may become blocked, but in my whole experience this has never happened.

(4) It may be coughed out, while I have had this occur several times, in but one instance did it need replacing. These were all acute cases.

(5) It may slip into the trachea.

(6) The tube may create a condition which demands its retention. Viz: Adductor spasm.

Complications of Intubation.—In acute non traumatic laryngeal obstruction of children, the most frequent complications are: (1) A pin hole aperture through the cricoid region caused by extensive swelling. (2) Detached membrane in glottis or sub-glottic area. (3) Low tracheal membrane. The last condition can be overcome by a method of direct intubation recently perfected by Dr. Lownes Lynah of New York City. The laryngeal angle not being a factor a tube of sufficient length to reach below the obstruction can be as easily introduced as a short one.

Consideration of Tracheotomy.—(1) It should be the operation of choice with those experienced with intubation. (2) It should not be done as a last resort, but without hurry and anxiety while the patient is in good condition. The technique is simple, a sharp pocket knife or razor blade and a couple of hair pin retractors will answer as instruments in an emergency. (3) The dangers of sepsis and pneumonia are infinitely greater. (4) The larynx gets complete rest. (5) It is safer in sloughing conditions of the laryngo-pharynx. (6) It is an operation for institutions where thorough asepsis can be carried out.

The tracheal trocar and canula is dangerous and will not be discussed here.

Non-Instrumental Measures.—They are not worth considering once respiratory stridor, tracheal tug, or the accessory muscles of respiration are kept continuously in action, under such conditions emetics are positively harmful.

In institutional work we are justified in waiting longer before applying surgical means than we are in private practice. The great danger in these cases is in permitting the heart to become overtaxed by lack of oxygen and labored respiration, when a trifling exertion of the part of these little patients causes their lights to go out.

Position.—I wish to register my protest against the sitting in favor of the prone position for intubation. My first two deaths were caused by fright and delay while trying to use the sitting position. In the first case an ignorant but well-meaning father released his child and in a few seconds it was dead. In the second death a seven year old boy resisted so violently that his heart failed. With a child prone on the edge of a bed it is not excited nor handled and everything is gotten ready, two assistants, usually the grandmother and the family doctor are instructed, one to kneel by the bedside and hold the child's hands and knees, the other to steady its head and mouth gag as soon as it is slipped into place, and before the little patient knows anything unusual is to take place the tube is in position.

Prolonged Cases.—In this series of forty-six cases there are sixteen prolonged ones (more than one intubation), numbering from 2 to 6 re-intubations. In these acute and subacute cases I believe the causes of this condition are: (1) Adductor spasm. (2) Hyperplastic infiltration. (3) Vaso-Motor paralysis due to the pressure of the tube.

Just a word in defense of my habit of leaving the ligature lopped over the ear and held down to the cheek by a strip of adhesive in cases remote from assistance: (1) It prevents swallowing the tube if coughed out. (2) If coughed out it is known to all. (3) It prevents the tube from slipping down the trachea. (4) In cases of occlusion, extubation can be instantly performed by any untrained assistant. (5) Fright avoided at extubation. Unless the child is old enough to understand and to be trusted it should always wear a short paste board splint over the elbows.

Removal of the Tube.—The first extubation is usually advised on the 3rd or 4th day. My experience shows that in those cases where it was done on the 4th or 5th days fewer required re-intubation. There is always a period of anxiety following the first extubation. I make it a rule to wait an hour and if there is increasing dyspnoea or frequent spasms I re-intubate. It does not pay to leave these little patients miles away in a doubtful condition, when they need help it must be forthcoming at once. If indications for the continued use of the tube are not apparent in one hour the large majority will not need it at all.

Management After Intubation.—Infants and children who have endured the intense efforts of obstructed respiration for even a short time have performed prodigious labor and are so exhausted that they go to sleep immediately after the tube gives free breathing space. This period of deep relaxation often glides into a condition of eternal sleep from pure cardiac weakness. It is at this time that they must be carefully watched and judiciously stimulated. Two of the cases in this series in the language of the family, "just slept themselves away." I have found no stimulant as beneficial as alcohol in the form of brandy, the greater the degree of sepsis, the larger the dose

Diagnosis.--Nearly all the cases I have seen were emergencies and some of them across country 50 miles distant, and seen only at the time of the intubation and extubation.

To take cultures under these circumstances is not very practical and yet an ultimate scientific diagnosis rests on a positive culture. For clinical purposes a diagnosis of laryngeal diphtheria in children is justified where stenosis has been gradual, constant and increasing for several hours even without adequate evidence of its causation in the pharynx or larynx. The visibility of a membrane is not necessary, in many of the primary cases I have seen no evidence of it under direct inspection, though it may have been present in the subglottic area, where it is inadvisable to investigate when an infant is already cyanotic.

Differential Diagnosis.—The conditions most likely to be confounded with laryngeal diphtheria are: (1) Edema of the larynx (2) Retro pharyngeal abscess. (3) Abscess in lateral epiglottic folds. (4) Spasmodic croup. (5) Foreign bodies. (6) Enlarged thymus.

Antitoxin.—I do not give prophylactic doses in private practice, I prefer to watch for the appearance of the disease when a sufficient dose given early just as surely cures. When the disease is primary and intrinsic my experience is that the constitutional symptoms are less profound but larger doses of antitoxin should be given, so that the toxins may be completely neutralized before extension can occur. All cases of this type would probably receive greater benefit by intra venous administration.

Timidity in not using enough antitoxin has caused more deaths than the mistake of giving more than is necessary. The only limit to the dose is the result desired.

Date	Name	Age	Consultant	Intubations	Antitoxin	Membrane	Laboratory	Result	Remarks
1 Feb. '08	Ide	6	C. B. Earle	1	10,000	Present	....	Death	Died before intubated. Struggled, sitting position.
2 Feb. '08	Bowman	2	T. W. Bailey	1	none	Present	....	Death	Died while intubating, father released; sitting position.
3 Oct. '09	Vaughn	1	R. E. Houston	2	10,000	Present	....	Recovery	
4. Oct. '09	Garren	2	R. E. Houston	1	10,000	Present	....	Death	Coughed out tube. Memb. on post. surface epiglottis.
5 Sep. '09	Wertz	6	J. B. Earle	3	15,000	Present	....	Recovery	
6 —— '09	Forrester	2	A. White	1	13,000	Present	....	Recovery	
7 Sep. '10	Duncan	2	F. G. James	3	18,000	Present	....	Recovery	Respiration had ceased.
8 Nov. '10	Ray	2	W.T. Brockman	2	10,000	Present	....	Recovery	
9 Nov. '10	Littlefield	1½	F. G. James	3	10,000	Present	....	Recovery	
10 Dec. '10	Bailey	3	W.T. Brockman	2	11,000	Present	....	Recovery	
11	Colored	5	C. Q. West	1	15,000	Not visible	Culture Pos.	Recovery	
12 Nov. '10	Jordan	2½	T. T. Earle	2	22,000	Not visible	Culture Pos.	Recovery	
13 Aug. '10	Gerrard	3	F. Jordan	3	25,000	Present	....	Recovery	
14 Feb. '11	Merritt	2½	C. C. Jones	2	Not rec.	Not visible	No Culture	Recovery	After second intubation severe pneumonia.
15 Nov. '10	Sams	11 mo.	B. Steedley	2	20,000	Present	....	Recovery	
16 Oct. '12	Dendy	3	J. B. Hill	2	15,000	Not visible	Culture Pos.	Recovery	Two similar cases developed in adjoining houses.
17 Dec. '12	Hudson	4	W. E. White	1	10,000	Not visible	No Culture	Death	Died few hours after intubation. Temp. 106; this may have been anophylactic or a true toxemia.
18 Dec. '12	Jenkins	2½	A. White	1	10,000	Present	....	Recovery	Coughed out tube the 6th day.
19 Sep. '12	Richey	3	J. G. Mock	1	15,000	Present	....	Recovery	
20 Sep. '12	Hellams	4	C. E. Rodgers	2	Not rec.	Not visible	No Culture	Recovery	
21 Sep. '12	Messer	2	H. T. Dacus	1	10,000	Present	....	Death	Heart's action bad; sat up in bed and fell back dead.
22 Oct. '12	Hunt	1½	B. F. Goodlett	1	10,000	Present	....	Recovery	Coughed out tube 7th day.

Date	Name	Age	Consultant	Intubations	Antitoxin	Membrane	Laboratory	Result	Remarks
23 Dec. '12	Lawton	1	C. B. Earle	3	15,000	Not visible	No Culture	Recovery	Coughed out tube the last extubation, which was 4th time.
24 Jan. '13	Jenkins	1	J. M. Wallace	2	Not rec.	Not visible	Culture Pos.	Recovery	
25 Oct. '13	Taylor	1½	R.V. McDaniels	1	Not rec.	Not visible	No Culture	Death	"Slept itself away."
26 Oct. '13	Childs	4	C. H. Faire	1	15,000	Not visible	Culture Pos.	Recovery	One year later this child died of a similar attack.
27 Dec. '13	Dupre	1	L.L. Richardson	2	11,000	Present	....	Recovery	
28 Feb. '14	Sullivan	3	A. E. Boyd	1	10,000	Present	....	Recovery	
29 Feb. '14	Turner	8	C. H. Faire	1	10,000	Not visible	No Culture	Recovery	Coughed out tube, marked inflammation of larynx. Infiltration of ventricles. Diagnosis doubtful.
30 July '13	McHugh	1	J. G. Mock	1	10,000	Present mouth & pharynx	....	Death	Had chronic illeochloitis, marked inatition.
31 Oct. '13	Styles	2	H. T. Dacus	1	10,000	Present	....	Death	
32	Guyton	2	Drs. Parker & Sullivan	1	Not rec.	Present	....	Recovery	
33 May '14	Parham	1½	J. B. Hill	1	15,000	Present	....	Recovery	
34 Oct. '14	Spearman	1½	C. L. Guyton	1	12,000	Present	....	Recovery	
35 Oct. '14	Rodgers	2	Thomason	1	10,000	Present	....	Recovery	
36 Oct. '14	Turner	2	Wallace	1	15,000	Present	....	Death	Cyanosis very slow in clearing up after intu.; suggestion of low tracheal obstruction. Temp. 105.
37 Oct. '14	Farrow	1½	Thomason	1	Not rec.	Not visible	No Culture	Death	Respiration had ceased before intu. Post mortem revealed membrane trachea.
38 Oct. '14	Williams	3	Campbell, S. D.	1	15,000	Not visible	Culture Pos.	Recovery	
39 Oct. '14	Donnald	2	J. G. Mock	1	15,000	Present	....	Recovery	
40 Oct. '14	Duncan	3	B. F. Goodlett	2	12,000	Present	....	Recovery	
41 Sep. '14	Bradley	2	C. H. Faire	6	Not rec.	Present	....	Death	Inanition, left hemiphlegia, pneumonia, the only chronic case in series.

Date	Name	Age	Consultant	Intubations	Antitoxin	Membrane	Laboratory	Result	Remarks
42 Nov. '14	Knight		Thomason	2		Present	....	Recovery	
43 Nov. '14	Henderson	4	J. B. Duckett	2	20,000	Present	....	Recovery	
44 Dec. '14	Stone	3	R. E. Houston	2	10,000	Not visible	Culture Neg.	Recovery	Complicated with lobar pneumonia, whooping cough and acute nephritis.
45 Dec. '14	Campbell	1	C. O. Bates	1	15,000	Not visible	Culture Pos.	Death	Intense toxemia and chronic cyanosis.
46 Jan. '15	Duckett	2	R. E. Houston	1	10,000	Not Visible	Culture Pos.	Recovery	Sick one week with catarrhal symptoms throat, had been inspected several times.

Deaths, 11, 26 per cent.
One from accident, coughed out tube—Case 4.
One was morbund and hopeless before intubation—Case 37.
Two died from violent struggling before intubation—Cases 1 and 2.
Two died a few hours after intubation with hyperpyrexia—Cases 17 and 36.
One died from cardiac failure—Case 21.
Two died because of chronic exhausting disease—Cases 30 and 41.
Two died from neglect, careful nursing would have altered result.
Sixteen cases membrane not visible; nine of these had a culture made.
Eight cases culture reported positive, the one reported negative was diagnosed edema of the larynx and the culture made as a precaution.

THE BETTER WAY OF PUTTING A DIAPER OF A BABY

BY SAMUEL A. VISANSKA, Ch.G., M.D.
Atlanta, Ga.

Mr. President and Gentlemen of the South Carolina Medical Association:

It is with peculiar pride and pleasure that I come before you today; not as a fellow physician, not solely as an invited guest from another state; not as a scientist with an idea to advance or a theory to exploit and least of all as a stranger seeking an introduction to the medical men of South Carolina. On the contrary, it is as one of your very own brethren that I am here; this is, indeed, a veritable home coming occasion for me, for as some of you may remember that not only is South Carolina my native state but I first saw the light of day at my grandfather's home in the adjoining County of Abbeville within a few miles of the town of that name.

But even of more importance than the mere accident of a birth place is the fact that Dr. Parker, your able president, was once my own preceptor, and my first faltering steps along the rugged pathway of a medical education were taken in the Medical College of South Carolina.

That Dr. Parker should have asked me to be with you today gives me genuine gratification, and I shall always count it as one of the few rewards of my professional career that my brethren in South Carolina have kept cognizant, in some measure of my work, and that they have made it possible for me to thus address this learned body of my professional peers.

I therefore take this occasion to thank Dr. Parker first of all for his kind invitation to meet with you, and then to thank each one of you, my hearers, in advance, for whatever attention you may accord my little talk.

Certainly if you have anticipated an eminently scientific treatise on some purely abstract subject, or if you have desired an array of unusual theories regarding any one of the grave problems that beset our profession, then I fear you will undoubtedly be disappointed when you note the very humble nature of the subject upon which I have decided to speak to you today. But if we follow the plain pathway of evolution in the physical world we will at once admit that it is from the humblest beginnings that the most far-reaching results are traced, and also that it is from the most apparently simple errors that gigantic physical disabilities may occasionally result. I have always believed that the attention of a true physician must be directed just as closely and as carefully to preventing disease, deformity and death as it is to combatting these conditions when they exist or threaten. It is because I have myself endeavored to adhere closely to this theory in my own private practice that I was first led to observe a very simple thing which I still believe might well cause some complex and inexplicable physical conditions the source of which we can trace in no other way.

We have all heard and read learned diatribes against the modern method of dressing the adult; we are actually inured to much of this, and yet I feel certain that many of the present fashions which indicate a general dress reform may be traced to the continual protests of the true physician. For instance, our women are no longer bound in iron stays which marked the dress of "Good Queen Bess" of an earlier century; nor are they invariably fettered with ridiculous heels half a foot high, nor are they choked with tight collar bands reaching to the ears and compressed with waist lines which can be spanned with an open hand. Extremes in dress we see, of course, but it is a general rule that these are gradually giving way to modern good sense and fashion itself is setting the pace for a healthier, heartier and happier race of women.

But despite these self-evident facts in the dress of our women, there has been comparatively little change in the dress of our infants since the earliest recorded times. This, too, despite the fact that infancy is the period when the human bones are soft, pliable and easily directed into normal or abnormal lines. We need no greater proof of this than that furnished by the feet of the Chinese women which are even today deliberately deformed in order to keep the female safe at home by depriving her even of the physical power to wander far afield.

We would be horrified if it were even suggested that we of the western world might be starting our children in the race of life with a physical handicap compared to which that of the Chinese would seem small and insignificant.

I am not attempting to reform the whole human race, and I would not have you think for a moment that that was even my most remote intention, but I do hope you will agree with me that at least I have discovered one heretofore overlooked avenue through which radical reform seems certainly indicated.

It has been my special function to devote myself for years to the diseases of children and by a mere accident I happened to find a method of dress reform which I am anxious to submit for your consideration. I cannot, however, claim to have originated the reform and the only credit I can claim, if credit of any sort there is, is that of recognizing the possibilities involved in a suggestion which came to me through a Chicago woman who brought her baby to me for treatment. When I took the rectal temperature of the little one I was instantly attracted by the novel method which the mother had used to adjust the child's diaper. Instead of the usual plan of folding the napkin in a triangle with the point pulled upward and the ends fastened tightly around the waist, this mother had folded the napkin in a long strip and had cut the cloth somewhat in the shape of a T square a little longer than wide. Two safety pins were used; one on each hip of the child thus securing the bandage comfortably, perfectly and while affording the protection needed there was absolutely no undue compression of any organ or set of organs. I asked the mother immediately why she used this method; her reply was that it had seemed to her "more comfortable," and at once my mind was busy with the many reasons as to why this should be exactly true. "More comfortable" in every way; not only for the child at the moment, but for the physical health of the adult in the future.

Think for a moment of the added comfort of a child relieved of a tight binding across the lower abdomen where originate so many forms of intestinal disorders; disorders which might indeed be produced by this very tightness of the napkin. In fact I have often been called to infants crying from no apparent cause and on examination I have found the tender flesh marked by a dull red line where the napkin has been bound tightly around the body, and when this was removed the child became instantly quiet. It seemed very evident that a little gas had formed after the napkin had been adjusted and the pressure had become almost unbearable. Yet another point occurred to me in this direction: the majority of people are right-handed and for this reason a sharp pull is given from the left toward the right side when the napkin is adjusted and as this brings the pressure directly over the sigmoid, which as you know is found on the left side and which holds the fecal matter until expelled, the pressure here and over the lower part of the abdomen is no doubt one of the main causes of intestinal stasis in infants, for it is a fact that seven out of every ten infants whether fed at the breast or artificially, are constipated. Yet another cause for this intestinal stasis may be found in the horrible abdominal band or binder which is as universally used and as often improperly adjusted as the napkin. It is difficult to convince the average nurse or mother that this is merely a navel dressing and subserves no other purpose whatever. But the combination of tight binder and torturing diaper form an absolutely cruel method of dressing an infant and yet it is as universal as infancy itself! Not a few women want the diaper and the binder to fit as tightly as a corset and here we have a combination of pressures quite as unnatural as the foot binders of the Chinese already referred to and a thousand fold more dangerous.

For many months I have been carefully investigating as to the texture of the bones of the pelvis in infants and I have found these bones quite as pliable, in proportion as the other bones in an infant's body. Parvin, in an old work, and some of our latter day authorities tell us that the pelvic bones in early life are composed of three bones and as between them the ossified union is not complete until the subject is eighteen or twenty years old. These same authorities state that "just as no two human faces are exactly alike so it is probable that no two pelves can be found which do not present some differences and in addition to this it is further claimed that no pelvis is perfect in symmetry and form or normal in measurement." But it is diffcult to state positively that our infants are born with these pelvic differences, and even though the sacrum and coccyx complete the pelvis posteriorly, my conclusion as to the possible effect of the napkin would not be altered. From all this, therefore, we can see that by making undue pressure around the pelvic bones the anterior-posterior diameter is slightly lengthened, and the transverse made narrower, and by making greater pressure on the left side than on the right it would unbalance the normal pelvis even if the bones were normal, more so if rachitic. In considering the effect of the misused diaper we must bear in mind that it is a bandage worn twenty-three hours out of the twenty-four, and in the majority of cases until the infant's eighteenth month.

while it is not unusual to find this garment on a two year old child.

Neither the bladder nor the uterus takes its proper place in the pelvic cavity until the child is at least six years of age, hence during the entire period when the diaper and binder are used the unnatural pressure is a menace; in fact until the 25th year this danger may exist for not until that time is the bony union complete.

We might well retrace our steps a little and learn a valuable lesson on this whole subject from our Indian forbears. The Indian papoose has a diaper it is true, but it is a garment of soft cloth and this cloth is rolled round the Indian infant; it is not even pinned in any one place but the baby's entire body is left as nature intended it to be, comfortable and straight and unhampered by any of the artificial dressings of modern society. Who shall say that much of the female health and strength among the Indian tribes is not due to this very cause? Certain it is that Indian women bear children easily; instrumental delivery among them is almost unknown, they seldom have any form of pelvic disorder and research shows that the Indian woman dresses loosely from infancy to old age, that her health is proverbial and there MUST be a reason for it.

Gentlemen, may it not be possible that the very question I am discussing may furnish the explanation of this? The outdoor life the Indian woman leads; the hard work she does, the coarse food she eats could not furnish the reason. It must lie then, in the manner of dressing, and while I do not advise our own women to give up a right fitting, correctly supporting corset, I do most strongly urge that the soft bones of our infants be left unhampered. I do insist that there is some fundamental reason for much of the discomfort, danger and disease so prevalent in our social life to-day. Neatness in woman's dress is an essential: neatness in caring for our infants is equally necessary but neatness and health are absolutely compatible whither in the infant or the adult.

Before attempting to demonstrate exactly the method of adjusting the diaper in the new way let us consider yet a step farther, the conditions produced by the old method. We must consider that the fundus of the uterus is on a line with the anterior superior spinous process; that the bladder when full, rises a little higher, and that when you put on a baby's napkin, tight or loose and pin it in the center with a large safety pin and sit the child up, imagine what takes place underneath the artificial bandage, especially when, as often happens, the long ends of the triangle are knotted and forced underneath the front point! This latter practice makes a hard lump pressing deep into the lower abdomen and it would be wonderful indeed if deformities did not result from such conditions. I say again that I believe they do so result and there are many minor ways of proving it. For instance, I have heard a fashionable dressmaker, as well as a well known tailor, state that the female form is found to be larger in the right hip than in the left in seven out of every ten cases. This is more noticeable in females where the garments must be fitted more carefully over the hips than in males, and if this is a fact why might it not result from the pressure brought to bear upon the left side in infancy thus preventing its normal development while the right side, unfettered grows to full size? We all know how common uterine and other pelvic displacements are in women; we even hear it said occasionally that these are "congenital;" but are they? Why might they not result from the very conditions we have been discussing and why, if this is possible, cannot we begin at once to prevent such deformities in the future?

I hope you will all consider this question; I know it is a perfectly new idea, but when we recall that there are even now being presented revisions of the Bible itself, why cannot we safely consider revisions and reforms in our dressing of infants? I am anxious to show you exactly what the new method of putting on a diaper in a safe way is and to this end I had a series of photographs taken to illustrate and emphasize my point.

I am indebted to Dr. R. L. Hannah for his assistance with the photographs taken post mortem and also to Dr. John Derr, both of Atlanta, who made an excellent X-ray of the infant pelvis, while Mr. Alf. Lomax, the well known Atlanta photographer, produced the finished picture. Miss Crawley, R. N., assisted me with the pictures of the living baby and I shall always feel grateful to these friends who contributed so substantially to my successful investigations.

The pictures tell their own story and it is truly encouraging to note the ready acceptance of the new method of putting on a diaper which is accorded to it by nurses, doctors and mothers everywhere.

At the Child Welfare Exhibit held in Atlanta in the fall of 1914 and which was given under the direction of the National Child Welfare Association, I had a demonstration of this new way of putting on a baby's diaper, using a life-sized doll as the subject. The nurses in charge of this exhibit told me that it was the most attractive and most crowded display of the entire exhibition.

Then, too, when I was in Philadelphia some months ago I explained my ideas and my plan to Dr. Francis Sinkler of the Episcopal Hospital. He introduced the new method in that hospital and since that time I have heard from him and he writes that the nurses are using the new way of putting on a diaper and "that it works admirably." It is also in use in the Atlanta Child's Home, in Dr. Baker's Sanitarium in Charleston, S. C., and in many private homes in Atlanta, Charleston and other portions of Georgia and South Carolina.

This is a hopeful indication and one which I welcome eagerly as indicating that mothers are ready for reform; that the old methods when proven harmful will readily be relinquished and that we stand today facing a new era in which we shall take note of even the most minute matters when they seem to tend toward safer, saner and more sanitary methods of living. To the physician it is given to discern "the handwriting on the wall" and to him more than to all others is granted the privilege of interpreting the message and of handing it down from generation unto generation until our race shall come again into its lawful heritage of perfect health.

1101-3 Fourth National Bank Building.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Stated Meeting Held May 13th, 1915

DR. WALTER LESTER CARR, IN THE CHAIR

Prophylactic Vaccination for Varicella.—Dr. Sophia R. Rabinoff presented this paper in which she related her experience with prophylactic vaccination during an epidemic of varicella in the wards of the Hebrew Infant Asylum of New York City. She stated that Kling of Stockholm and Handrick had both found that a definite degree of protection was afforded by vaccination against varicella. The value of such prophylactic therapy in institutions was evident. The chief problem had been to obtain the virus. Animal inoculations had thus far been unsuccessful. The source of virus at present was the contents of the lesions in an active case of varicella. Early in the course of the disease, while the vesicles were clear, some material could be collected in sterile capillary tubes and transported for use elsewhere, but this was not always feasible owing to the smallness of the vesicle and the minute quantity of material. In the majority of instances it was necessary to use material directly and immediately from either vesicles or pustules. The presence of any transmissible disease in the donor must be considered and guarded against. The method employed at the Hebrew Orphan Asylum was similar to that of Kling, except that instead of multiple punctures, small scarifications were made on the arm to be vaccinated. A vesicle in a fresh case of varicella was pierced with a vaccination lancet with which the scarification was carried out. The highly contagious character of this disease was well illustrated in the Hebrew Orphan Asylum. In one ward among 38 susceptible children, 32 developed varicella. In another ward among 28 susceptible children, 21 came down with the disease. The incidence of the disease among those who had been vaccinated and among susceptibles was shown by the chart, by which it was seen that in a ward containing 38 children in which 32 came down with varicella there was one vaccinated child, and that child escaped. In another ward containing 20 children who had been vaccinated, although three active cases of chickenpox occurred in the ward, not one of the vaccinated children took the disease. The striking contrasts were shown in the other wards. Among the entire group of 142 susceptible children, 114, or about 75 per cent, developed varicella, while in the group of 76 vaccinated children, only six, or eight per cent, contracted the disease. Of these six cases, two developed on the day following vaccination, two seven days later, one nine and one ten days later. In other words, all the cases among the vaccinated children developed within the incubation period of the disease, which was about sixteen days. In this epidemic the vaccination undoubtedly limited the spread of the disease and could be recommended for use in similar institutions in the presence of an epidemic as well as in selected cases in the home.

Dr. Alfred F. Hess said that he could merely reiterate what had been said. Dr. Rabinoff's results spoke for themselves. They showed that vaccination provided some protection. Where two or more children in the same family had been exposed at the same time it was questionable whether vaccination would be of much practical value, since it seemed that vaccination during the incubation period of the disease was not very effective. However, where one child of a family was exposed and came down with the disease, prophylactic vaccination would be of great value to the others. Although varicella was not a serious disease, it caused great inconvenience in both the home and in institutions due to the long period of quarantine which it necessitated. These vaccinations had been discontinued at the Asylum for the present due to the cessation of the epidemic, but this therapy would be used at a subsequent time should chickenpox make its appearance.

Dr. William H. Park said he wondered if Dr. Rabinoff knew how long the virus could be preserved at low temperatures and whether it could be preserved at freezing temperature for as long periods as vaccine virus, and also whether she had been able to obtain enough from vaccinated persons to use for purposes of propagation. A third point about which he would like to know was whether she had observed whether the virus was more abundant in the epithelium at the base of the vesicles than in the fluid contents.

Dr. Sophie Rabinoff, in closing the discussion, said that she could not say how long the vaccine would keep, since they had been able to obtain so little and had been using it immediately for prophylactic purposes. In most of the cases they had been using the virus from the vesicles directly. Dr. Rabinoff said she had nothing to report with reference to the propagation, but Dr. Kling reported having propagated it successfully through six generations, using material from one vaccinated case to another. They had not tried scraping the vesicles; there was so little serum that they had just taken what they could get.

The Use of Sensitized Gonococcus Vaccine in Gonorrheal Vaginitis.—Dr. Russell L. Cecil read this paper. He said that a sensitized vaccine differed from other vaccines in that it had been treated with a specific homologous serum. Sensitized vaccine was less toxic and gave higher degree of immunity than the non-sensitized. Sensitized vaccines had now been used in many infectious conditions. French writers had been very enthusiastic in regard to the use of sensitized gonococcus vaccine, especially in arthritis and orchitis, but comparatively little had been written about its use in gonorrheal vaginitis. The series of twelve cases which were presented was, the essayist stated, too small to warrant one in drawing any definite conclusions as to the value of the treatment, especially since all the cases received local treatment at the same time. These patients were all under twenty-five years of age. Two cases were complicated by salpingitis and two by arthritis. A few of these cases had been treated locally before they saw a bacteriologist. It was much more difficult to get results in cases of long standing. Two to 16 inoculations were given at intervals of from five to eight days. It was his custom to start with a dose of 100 million, but he had used doses as high as two billion in the course of the treatment. In almost all the cases there was a sharp local reaction, but in only one was there a marked constitutional reaction. The severe reaction usually came on after the first dose of vaccine had been given. It was not different in character from other vaccine reactions. Nearly all the patients in this series had received local treatment in the form of potassium permanganate daily and silver nitrate distensions once a week. The results had been satisfactory in all but three cases. One of these was still under treatment and the other two were frail and poorly nourished girls. Both had severe reactions and never developed any resistance to the vaccines. It was difficult to draw conclusions and the series was presented that the Section might draw their own conclusions. The cases seen early responded more quickly to the vaccines than those seen after the infection had existed for some time. It should be remembered that the gonococcus sometimes disappeared long before the patient was cured, and hence treatment should not be abandoned too soon.

Dr. William H. Park said they had never used sensitized vaccines owing to the fact that in their early work they found that agglutination did not develop so well from the non-sensitized vaccines. But it had been shown that they had been mistaken in giving up this method for this reason for it had been shown that other antibodies developed. If sensitized vaccines were giving better results than the non-sensitized, it was probably because they could be given in larger doses without any deleterious reaction. He had understood Dr. Cecil to say that they had succeeded, not only in controlling the symptoms but in getting rid of the organisms, and that was certainly somewhat better than they had done at the Willard Parker Hospital.

Dr. R. Ottenburg said he had no experience with sensitized vaccines. He had been at first skeptical as to their probable value on account of the well known experiments in the production of antibodies against red cells sensitized with hemolytic antibodies. In these experiments little or no antibodies could be produced by such injections after the red cells were completely sensitized; nevertheless, immunity against infection and the immunity reactions which could be demonstrated in the test tubes were not necessarily parallel, and the question as to whether immunity to infectious agents could be developed by sensitized vaccines was one which would have to be settled chiefly by such clinical observations as those of Dr. Cecil.

Dr. A. L. Garbat said that Dr. Park had called attention to the point that sensitized vaccine did not seem to produce antibodies. In his experiments on typhoid he found that no agglutinins and bacteriolysins were obtained with the sensitized vaccines as were with the non-sensitized, but they did get a bacteriotropic serum and also one that could protect and cure mice against injections of ordinary bacteria. Dr. Garbat said he had been brought up on Dr. Wright's principles and believed that small doses of vaccines produced a sufficient rise in the opsinins. There were several points in reference to Dr. Cecil's results that were open to discussion. Dr. Cecil did not say what type of gonococcus he had used nor did he state whether he had used a polyvalent vaccine. He did not say whether he had used a vaccine made from the infantile type of organism. It had recently been shown that the adult and infant types of gonococci differed greatly in their antibodies.

Dr. Royal Storrs Haynes asked how long Dr. Cecil had followed these patients to see whether there were any relapses. This was important since these cases were so prone to relapse.

Dr. J. S. Ferguson said he had not used the sensitized vaccines but he had used the non-sensitized in more than half a hundred cases and he had obtained a definite improvement after two or three injections. He had also obtained more striking results in the acute than in the chronic cases. The profuse discharge changed to a very slight one after three or four injections. In chronic cases in which there was an indefinite discharge one did not seem to get the same striking results. Dr. Ferguson asked Dr. Cecil if he had observed whether after the use of the sensitized vaccines there was a fairly definite period in which one might look to see a reduction in the amount of the discharge. It seemed to him that the length of time the disease had existed was a very important item, especially in children. It was also difficult to determine in such cases when a cure had been effected.

Dr. Fenton B. Turck said that he was interested in this presentation, more particularly because it was so conservative and because it called their attention to the necessity of making further investigations as to the action of sensitized vaccines. Dr. Turck related the case of a young girl who was supposed to be suffering from tuberculosis and who had been taking the anti-tuberculosis treatment in England. On coming to this country she consulted him. An X-ray examination showed a glandular enlargement, but the diagnosis with reference to the tuberculosis was not confirmed. Examination of the stomach contents showed the colon and pyocyanus bacilli in symbiosis, and examination of the feces gave the same results from the lower bowel. He administered sensitized vaccines, giving 150 million for the first dose. He then waited five days and administered a second dose. This was followed by an anaphylactic reaction and after this the patient had no further symptoms. She had now been well for a year. In other cases Dr.

Turck said he had had good results with the sensitized vaccines and thought they promised to be an effective therapeutic agent.

Dr. Cecil, in closing the discussion, said that Louise Pearce had shown that the gonococci isolated from infants were different from those taken from adults both in agglutination and in complement fixation reactions. He had prepared his vaccines from the Board of Health cultures of gonococcus, and his serum was taken from animals immunized against these organisms. The labor of making autogenous vaccine was great since it was necessary to immunize animals in order to get the sensitizing serum. It had been difficult to follow up the cases since they had been discharged. He assumed that they were doing well as they had not returned to him. One got better results when the cases were treated early and of course the improvement was more readily noted in those cases in which there was a profuse discharge.

Bacteria-Free Vaccine.—Dr. Hideyo Noguchi presented this paper, in which he stated that an ideal vaccine preparation should possess sufficient potency to insure a successful vaccination in cases in which there was no immunity and at the same time be free from secondary bacterial contamination. After describing the present method of producing vaccine. which required stringent precautions in order to produce a model vaccine, the essayist said that much labor and care could be spared if a method was found by means of which the virus could be propagated directly free from bacterial contamination. Dr. Noguchi said that after studying this problem for a year he had succeeded in propagating pure vaccine virus in the testicles of the rabbit and calf which was absolutely free of bacteria and preserved its virulence undiminished. The testicle of the rabbit had been employed in recent years for the cultivation of spirochetae, and the effects upon the organ of the inoculation of the usual vaccine virus had been studied slightly, but the few experiments performed did not have in view the preparation of pure vaccine for practical use in vaccination. The first essential was to have for inoculation into the testicle a vaccine virus quite free of bacteria. This was secured by inoculating the carefully cleansed and shaved skin of the rabbit with glycerinated virus, protecting the vaccinated surface with sterile gauze, collecting the skin vaccine at the height of the eruption, and, spores and spore-bearing bacteria having been thus excluded, emulsifying it in sterile salt solution, and treating the emulsion with pure ether or with phenol in appropriate concentration. Non-spore-bearing bacteria might thus be killed without seriously impairing the strength of the virus. Vaccine virus containing bacteria was unsuitable for testicular inoculation, since the inflammation which ensued favored the growth of the bacteria at the expense of the virus. On the other hand, when the virus devoid of bacteria was inoculated into the testicles it multiplied very much as it did in the skin, so that on the fifth or sixth day maximal growth had been obtained, after which, as the immunity rose, the multiplication fell off and ultimately the virus disappeared. Hence the testicles were removed at the proper moment and employed, in part, for reinoculation. Not every strain of vaccine virus could be transmitted to the testicles, and also, several successive testicular inoculations were required in order to adapt even a favorable strain to the testicular growth. Once adapted, the propagation in the testicles seemed to proceed as regularly as in the skin. When the virus was adapted to the testicle of the rabbit it could next be adapted to the testicle of young bulls. Several successive inoculations were required in the latter animal also in order to obtain virus of high activity. The testicular cultures of vaccine virus exhibited all the characteristic properties of the skin-propagated virus. The action of the two varieties on the skin and cornea of rabbits and the skin of calves was indistinguishable. The rabbit testicular strain produced typical effects in human subjects in whom were eliminated the secondary and general reactions due to bacterial association with the skin virus.

Dr. Noguchi stated that his paper dealing with this subject would appear in the June issue of Experimental Medicine.

Dr. Frank Sidney Fielder said he thought Dr. Noguchi should be complimented upon having done good, careful work. Dr. Noguchi had shown him his specimens and permitted him to see the advance sheets of his paper so that he was familiar with this work, and it fulfilled all the requirements of vaccine. It was identical with the standard glycerinized vaccine both in ordinary strength and in the various dilutions. It was naturally a desideratum to have a bacteria free vaccine. However, they knew that they now had a vaccine produced in a standard manner and one that contained no pathogenic organisms. The authorities at Washington imposed a series of regulation tests which had to be employed by all those manufacturing vaccine from the skin of the calf. It was formerly thought that a vaccine must be fresh, but they had learned that this was no longer desirable. They now got the green vaccine and mixed it with 50 per cent glycerine and one per cent carbolic. This was then plated and would grow some organisms, which, as a rule, were not pathogenic. They tested it out once a week an agar for five weeks. Usually after two or three weeks there was no growth on agar. It was also tested for gas forming organisms and for tetanus. The Hygienic Laboratory at Washington had tested samples from other laboratories, but in thousands of specimens they had found no organisms of tetanus. It might be stated that as now produced standard vaccine was practically free from bacteria. As to whether a bacteria free vaccine could thus be produced in the testicles of rabbits or bulls so that it would become a practical method the future would have to decide. The idea of propagating a virus in such an absolutely sterile way was appealing and he looked forward to trying it out to see whether the vaccine could be produced on a large scale. In a few instances this vaccine had been employed on human beings. It remained to be proven whether it would produce 100 per cent of successful vaccinations, which it must do to be practical. Another question was whether this bacteria free vaccine would keep as long as the standard vaccine from the calf. And, again, it would have to be proven whether when human beings became immunized with testicular vaccine the immunity lasted as long as the standard vaccine. The method would have to be tested out and in time it might be substituted for the vaccine from the calf.

Dr. Park said he wishes to say something of the harmlessness of the few bacteria in the standard vaccine. Until within a few years no consideration was given to the bacteria. It was demanded that the appearances of the vaccination in the calf should seem to be correct. Now they were trying to eliminate the bacteria. In order to prevent the increase of virulence of any bacteria in the calf the virus was passed from the child to the rabbit and from the rabbit to the calf. The bacteria from the calf's skin had never been shown to do harm.

Dr. Park asked Dr. Fielder whether vaccine from the rabbit was as permanent in its viability as that from the calf.

Dr. Fielder replied that at present they had some vaccines two years old from rabbits which they were using to vaccinate calves.

Dr. Park said that even leaving out the value of excluding bacteria the using of the rabbit would be an advantage in localities where they could not get calves.

Dr. Alfred E. Hess said he had been using these vaccines and was glad to have this opportunity of relating his experience. He first vaccinated a series of 12 children with this vaccine, and there were ten good takes and two that did not take. In the ten that took there were quite marked local reactions, almost as marked as with the standard vaccine, but the systemic reaction was much less marked, the temperatures never exceeding 100 degrees F. He then vaccinated another series of 12 children. In one of these the vaccination did not take, but in all the others there was a marked local reaction but no systemic reaction. The two children whose vaccination did not take were vaccinated a second time and it did not take again. From this small experience it might be said that this bacteria free vacine had the advantage of giving a slight systemic reaction but that possibly it was not as strong as that usually employed. Even if it did not take as often as glycerinated vaccine still for private patients and for infants it had a decided advantage on account of the lack of systemic reaction. There was another question, namely, whether the systemic reaction was due to bacteria, or whether this lessened systemic reaction was due to the absence of bacteria.

Dr. Noguchi, in closing the discussion, said he wished to say a word regarding Dr. Park's apprehension that in utilizing the rabbit material for practical purposes some organisms pathogenic for human beings might possibly be introduced into the organisms, thus offsetting the advantages claimed, that the testicular virus method of eliminating all bacteria hitherto associated with the propagation of the vaccine. Such a possibility seemed rather remote with the method advocated in this paper since so far as was known there did not exist any epizootia in the rabbit that was communicable to human beings. Compared with the calf there was a much greater possibility of avoiding such an occurrence by the use of the rabbit, since the calf was known to be susceptible to tuberculosis and foot-and-mouth disease, both of which were communicable to man. The advantages in this respect rested with the rabbit and not with the calf. At the same time, as stated in the paper, they might use bulls instead of rabbits. As to the protective value of the testicular bacteria-free vaccine against variola, it was fully equal to that produced by the regular skin virus as they had found that both afforded the same amount of protection in animal experiments. It would be advisable, however, to follow the suggestion of Dr. Fielder that a trial be made in a series of cases to determine whether or not persons who were first vaccinated with bacteria-free testicular vaccine were subsequently equally refractory to inoculation with the ordinary standard vaccine as were those who were previously vaccinated with the latter under identical conditions. Dr. Hess reported three failures in 25 vaccinations; this could be easily remedied by using a slightly stronger inoculation.

Experiences with Vaccines at the Massachusetts General Hospital.—Dr. Albert E. Steels of Boston presented this paper by invitation. He said that they began to use vaccines in the treatment of various infections at the Massachusetts General Hospital in 1907 and that since that time there had been a clinic open daily where this method of therapy was employed. So far the prophylactic use of vaccines was limited to vaccination against typhoid fever. Their obesrvations with the use of typhoid vaccines were similar to those of the United States Army. While they had always considered that cases of local sepsis were more suitable for treatment than those in which the infection was more or less general, at times they had treated nearly all the acute general infections with vaccines. The treatment of endocarditis due to the streptococcus viridans with an organism isolated from blood culture had not been very satisfactory. They had treated a few cases of staphylococcus aureus septicemia, all of the sub-acute variety, and although the vaccines did no harm, beneficial results had not been striking and it was the opinion of the essayist that these cases should not be treated in this way. Influenzal bronchopneumonia, both the acute and chronic types, had been treated with vaccines. In the acute type the vaccines did not seem to be of benefit. In a small series of cases of the chronic type the autogenous vaccines had been used but the series was too small to permit one to draw definite conclusions. In localized sepsis the disease process was less extensive and the natural defensive resources of the body were not strained as in a case of general sepsis, hence it seemed quite reasonable that vaccines should be more effective in cases in which the disease was localized. It was to be remembered that vaccines did not supply the body with any defense, they merely stimulated into action the natural protective forces. In furunculosis the vaccines had given the most brilliant results. The extensive incisions formerly thought necessary were now made only large enough to secure adequate drainage. The vaccines were injected subcutaneously twice a week in doses from 50 to 250 millions. Most of the cases healed promptly, but those that did not were given autogenous vaccines. In 198 cases, 85 per cent recovered following this treatment. Of the remaining 15 per cent some showed improvement but discontinued treatment while some had constitutional diseases which removed them from the simple furunculosis class. In some 30 cases of pyelitis and colon cystisis which had proven resistant to other forms of treatment autogenous vaccines were used. Of these 22 per cent became bacteria-free following the treatment. In addition 44 per cent stated that certain symptoms, such as pain, tenesmus, and frequent micturition were relieved although the bacillus still persisted. Thirty-four per cent of the cases received no benefit. Large doses of vaccines had been given in some of these cases, as much as 1,000 being given at one time without appreciable benefit or ill effect. The treatment of gonoccus infections was now confined to cases of gonorrheal arthritis and a few cases of resistant gonorrheal vaginitis. At present all the arthritic cases had the gonococcus complement fixation test performed before the commencement of treatment. Continued vaccine treatment did not seem to make a positive test negative; on the other hand, repeated injection of the gonococcus antigen apparently kept the test positive. Gonococcus vaccines did not confer a high degree of immunity. They had used sensitized vaccines to some extent. The sensitizer for each emulsion was a human serum strongly positive to the gonococcus complement fixation test. They had had no experience with gonococcus emulsions sensitized with an animal serum. The results from sensitized vaccines had been identical with those secured from vaccines made in the ordinary way. While it was exceedingly difficult to compile statistics showing the results of the treatment of gonorrheal cases, since the number of cases that formerly were considered cured but which still had a latent focus was quite large, and since the repeated injections of vaccines tended to keep the fixation test positive. However, among 149 cases 35 or 23 per cent became clinically well; that was the joints were not swollen, and there was no effusion, no stiffness and no tenderness, and the patients were able to do their ordinary work. Of these 149 cases, 109 or 73 per cent were relieved, that was, they were well enough to do their ordinary work, but some slight symptoms remained. Four or five per cent were not relieved; these were the chronic cases which had had several attacks of gonorrhea with arthritis.

Dr. Steele stated that it was their belief that the treatment by means of vaccines had a definite place in the routine work of the hospital, but that its exact value could only be determined when comparative statistics were more available than they were at present. They did not believe in the vaccine treatment of colds or other self limited processes, nor in the use of mixed bacterial filtrates. All treatment of bacterial infections should be specific whether that treatment was by means of vaccines, bacterial filtrates or serum.

Dr. Cecil said that he felt that the three types of infections that were most benefitted by vaccines were the staphylococcus, gonococcus and B. coli infections. In streptococcus infections of the upper respiratory tract the vaccines were of considerable value. There were so many kinds of streptococcus infections that it was necessary to have an autogenous vaccine. Dr. Cecil related the case of a patient with a streptococcus infection of the glands of the neck who was so septic that it was thought he would die. The ordinary autogenous vaccines were given without effect. Sensitized vaccines were then given and he ran along in somewhat better condition for a week, when his temperature became high and there was a metastasis in a joint. This was opened and drained. There were any number of positive blood cultures. It was thought the patient had an endocarditis, though he had none of the usual physical signs. He finally recovered. There were many such cases in which the ordinary vaccines were useless, but in which fresh autogenous vaccine was effective.

Dr. Frank Sidney Fielder said he would like to ask Dr. Steele what his opinion was in reference to the cases commonly treated with autogenous vaccines made from the root of a tooth which was considered as the source of infection. A great deal had been written recently as to the part played by defective crown and bridge work as a source of trouble around the socket of teeth and these infections were responsible for joint infections.

Dr. Albert E. Steele said that in reference to what Dr. Cecil had said of streptococcus infections of the respiratory tract, that he had had very little experience with these; most of his work had been with influenza cases. As to the primary infection being at the root of the tooth in streptococcus infections, at the Massachusetts General Hospital the policy would be to pull the tooth and to eliminate the focus of infection before using the vaccines, for they did not believe that vaccines would confer immunity enough to overcome an infection of that sort until after proper dental surgery had been employed.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Lange Gold Chloride Reaction on the Cerebrospinal Fluid of Infants and Young Children.—C. G. Grulee and A. M. Moody (Amer. Jour. Dis. Child., 1915, ix, 17) describe the technic of the Lange gold chloride reaction and their findings in congenital syphilis, tuberculous meningitis and other conditions. In the eighteen cases of congenital syphilis included in this report the cerebrospinal fluid reacted to the colloidal gold chloride solution always in the lower dilutions, and with a marked degree of regularity strongest in the dilutions of 1.40 and 1:80. There is a small group of cases of congenital syphilis in which the reaction is similar to that of paretic dementia. The reaction as obtained in congenital syphilis is most nearly approached by those conditions which show a slight inflammation of the meninges or brain and are not likely to be confused clinically with syphilis. The reaction in tuberculous meningitis is found to be most intense in the dilutions of 1:160 and 1:320. It is likely that the more rapid the course the more apt is the reaction to occur in the higher dilutions. From the foregoing statistics it is evident that the Lange gold chloride reaction is of value only as an aid in diagnosis.

Transplantation of Undescended Testicle.—P. Turner (Proc. Roy. Soc. Med., 1915, viii, Sect. Study Dis Child.,1; Amer. Jour. of O. and Dis. W. and Child.) records two cases of double undescended testicle treated by transplantation to the opposite sides of the scrotum through an opening in the scrotal septum. He claims the following advantages for this procedure: (1) The testicle is transplanted to the well-developed side of the scrotum, where there is much better accommodation for it than on the ill-developed side. (2) It is usually possible to effect the transplantation without dividing the vessels of the cord. (3) Sutures to fix the testicle in its new position are unnecessary, and the organ itself is not damaged during the operation. (4) When the testicle has been drawn through the septum in the scrotum the small opening contracts, and hence the weight of the scrotum acting through the septum exerts a continuous slight force tending to keep the testicle in its new position. (5) The operation is carried out without dividing the external abdominal ring and with the least possible damage to normal tissues.

Sugar Content of the Blood in Childhood.—Using a modification by Lewis and Benedict of their method, M. H. Bass (Amer. Jour. Dis. Child, 1915, ix, 63; Amer Jour. of O. and Dis. W and Child.) examined the blood of sixty children. Of these twenty-six were normal; the remainder were suffering from a variety of complaints. Their ages varied from two to fourteen years. They were examined from two and one-half to three hours after breakfast, so that postprandal hyperglycemia might be avoided. The temperature in all the cases but one was normal. None of the children showed glycosuria. In the series of normal children the percentage of sugar varied from 0.072 to 0.113; in other words, it did not vary from the percentage found in adults. The age of the child did not seem to influence the sugar content. The blood of children suffering from various ailments in general showed no great departure from the normal figures. Cardiac cases showing failure of the circulation gave very low readings. Two of these severely ill cases had albuminura and all four had enlarged livers. The case of endocarditis, adherent pericardium and ascites presented considerable cyanosis, but the blood sugar was low, 0.062, which is unusual since cyanotic cases have been found to show a mild hyperglycemia. Three cases of orthostatic albuminura all gave high readings. In the cases of cyclic vomiting the figures for the blood sugar were well within the normal limits.

Patent Ductus Arteriosus.—E. W. Hall (Archives Middlesex Hospital xxxi, 39; Amer Jour. Med. Sciences) reports three cases of patent ductus arteriosus. The first child, aged two weeks, was attacked suddenly by cyanosis and cessation of breathing. On admission to hospital it appeared healthy. There was nothing to suggest organic disease, and no physical signs of any heart lesion were present. The child had several subsequent attacks, succumbing to one of them. Respiration ceased and cyanosis developed rapidly. The heart, however, continued to beat regularly and the pulse could be felt at the wrist. The heart sounds became inaudible toward the end of the attacks. At autopsy the only lesion found was a patent ductus arteriosus, which was large enough to allow the passage of a large probe. The second child, aged two weeks, had similar attacks. No murmurs were heard over the cardiac area, but there were signs of bronchitis in the lungs. The child died during an attack, and the patent ductus arteriosus was the only abnormality found. The third child, aged three weeks, had a similar history and had typical attacks of cyanosis with complete inhibition of respiration, requiring artificial respiration for twenty minutes and oxygen and brandy to revive it. Autopsy again showed only patent ductus arteriosus. Most cases are reported as occurring in combination with other forms of congenital heart lesions, especially pulmonary stenosis. The cyanosis is probably due to a deficient aeration of the blood. The systolic murmur heard over the cardiac area, as described in the text-books, was absent in these cases. There was also no sign of obstruction during the intervals of the attack.

Cerebellar Abscess in a Child.—Ashby (Brit. Jour. Child. Dis., 1915, xii, 105; Amer. Jour. Med. Sciences) reports a case of cerebellar abscess in a child aged four years; in which the only symptoms were continued headache and listlessness and continued posture of lying on the right side. There was a slight bronchitis and the pulse was slow and irregular. The temperature was normal throughout and the cerebrospinal fluid was not under pressure, was clear, and normal except for a slight excess of lymphocytes and polymorphonuclears. The urine was normal and there had never been any discharge from the ears. Optic neuritis was present and became slowly worse but the pupillary reactions were normal. She was in hospital five weeks and lay in her usual position on the right side maintaining her listless attitude. For the last three weeks she vomited on an average of two or three times a day. After five weeks she had a right-sided convulsion and died. No diagnosis had been made except an improbable one of tuberculous meningitis. On autopsy a large abscess was found in the substance of the right cerebellum. The pus was creamy and contained pneumococci. The origin of the abscess is not discernible as the ears were normal. The slight bronchitis may have been the starting point. The few localizing symptoms during life were the persistent lying on the right side and the right-sided convulsion. There was no nystagmus or tendency to fall to one side more than another.

Gastric and Duodenal Ulcer in Infancy and Childhood.—As it is in comparatively recent years that the frequency and importance of gastric and especially of duodenal ulcers in the adult have been appreciated, it is hardly to be wondered at that these lesions in children have received scant consideration, particularly since they are comparatively rare in early life. Recently a number of valuable articles on these subjects have appeared, among which may be mentioned one on "Ulcer of the Stomach in Children Before Puberty," by C. D. Lockwood (Surgery, Gynecology and Obstetrics, October, 1914); another on "Duodenal Ulcers in Infancy," by Holt (Amer. Journal of Diseases of Children, December, 1913), and a third with the same title by Veeder (Amer. Journal of the Medical Sciences, November, 1914).

From the literature Lockwood collected 110 cases of gastric ulcer, and from correspondence, together with one case of his own, he added 15 hitherto unpublished cases. His studies show round ulcer of the stomach and duodenum to be relatively rare in children, but he believes it more common than most surgeons realize; and he also believes that many obscure abdominal symptoms which have been ascribed to appendicitis, gastroenteritis, etc., are due to ulcers. Welch found one case in a ten-year-old child in a series of 607 cases of gastric ulcer; and Wallenstein found five cases of gastrict ulcer in 390 autopsies at the Babies' Hospital in New York. Lockwood also states that the pathology of peptic ulcer in children does not differ markedly from that in adults. The ulcers may be single or multiple. In very young children they are more often superficial erosions and the deep funnel-shaped ulcer so characteristic in adults is rare. In older children more typical ulcers are found and perforation is common. Ulcers in children are relatively less frequent in the pyloric region, occurring most often on the posterior wall, near the cardia, and along the great curvature. Perforation occurs through the posterior wall into the bursa omentalis or through the lesser curvature into the pancreas. Many of the reported cases have been associated with tuberculosis and it is often difficult to distinguish simple ulcer from tuberculous lesions. Regarding diagnosis, Lockwood says: "Pain in the epigastrium, hematemesis, and bloody stools are conclusive signs. The two latter are usually absent and pain is often indefinite and not well localized. Pain, worse at night, loss of weight, and chronic indigestion are usually present. These symptoms should suggest ulcer; and physical examination, aided by microscopic examination of the stomach contents and stools for concealed blood, will render the diagnosis conclusive." Appendicitis seems to be the condition most often confused with gastric ulcer.

Holt collected from the literature 91 cases of ulcer of the duodenum in the first year of life and reported four cases from a total of 1,800 autopsies at the Babies' Hospital in New York. Veeder brings the number of reported cases up to 100 by adding 5 seen during a period of two years at the St. Louis Children's Hospital. In four of these a clinical diagnosis was made, confirmed later in three instances by autopsy, while the fourth infant recovered. The fifth case was found at autopsy, the lesion having been unsuspected during life.

The symptoms in Veeder's series of five cases were in part as follows: All of the infants were under six months of age and marasmic. All had vomiting. In a few cases the vomiting closely resembled the type occurring in pyloric obstruction and he believes that in all probability the mechanicism is to a large extent the same—the ulcer situated just beyond the pylorus acting as an irritant, producing spasm of the pylorus. As Veeder says, there is nothing very unusual in the association of vomiting and food decomposition; but when massive hemorrhage from the bowel is added (in the absence of acute ulcerative lesions of the large intestine and other conditions, such as polyp, which cause hemorrhage) he considers the symptoms strikingly suggestive, if not pathognomonic, of duodenal ulcer. Holt found that bloody stools were observed in 28 of 64 cases in which the clinical histories were recorded, and they were present in 2 of Holt's cases. Veeder points out that severe collapse has occurred in many cases accompanying and as a result of hemorrhage, and in some cases has apparently been the cause of death, and that the absence of subjective symptoms, which are of so much value in the diagnosis of duodenal ulcer in the adult, make the diagnosis dependent upon the association of the few objective symptoms described above. The presence of gross hemorrhage is the only definite symptom pointing to a duodentl ulcer and hence when this symptom is absent the diagnosis cannot be made. "Whether or not a diagnosis can be made by the use of occult blood tests when no gross evidences of hemorrhage have been observed is a question to be determined. That such tests should be made in all cases where vomiting is associated with atrophy in young infants is indicated, as it is only in this way that the value of such tests for the early diagnosis of duodenal ulcer can be determined."

Very little can be done in the way of treatment of a condition about which so little is known. In Veeder's opinion about the only indication is to place the infant under the best nutritional conditions which means breast milk, and it is to this alone that he attributes the improvement in one of his cases. Operation was not deemed advisable in any of his cases owing to the severe general nutritional disorder of the infants at the time the diagnosis was made. Yet the mortality was 80 per cent and he admits that if methods are found by which an ulcer can be recognized early surgical treatment offers at least a theoretical possibility. This admission is encouraging, for it took years of educational effort on the part of the surgeon and a high mortality under medical treatment to convince the internist that gastric and duodenal ulcers in the adult are essentially surgical conditions.—Editorial, Medical Record, June 12, 1915.

Epidemic Cerebrospinal Meningitis.—By A. Lundie and Associates (British Medical Journal, May 15, 1915). Typical meningitis symptoms must be recognized soon to prevent its spread. In 170 cases the primary catarrhal stage was marked in all; in was also present in every carrier. The throat is congested, the uvula edematous and flabby, and the venous radicles are distended and tortuous. The anterior faucial pillars and the posterior pharyngeal wall with the back of the soft palate are congested and injected. The color is a deeper blue than is found in the throat in scarlet fever. The voice is husky and there is a dry cough. At times the nasal secretion is tinged with blood, but there is very seldom a free nasal discharge. There is also a moderate degree of prostration except in the carriers, in whom health is normal, and in whom there is little alteration in pulse rate or temperature, unlike scarlet fever. The conjunctivae may also be congested and infected with a slight purulent exudation at the inner canthus. At this stage a streptococcus is usually the only organism which can be cultivated from the throat; it is suggested that the primary invasion is with this organism which prepares the way for the meningococcus. The second stage is marked by the addition of septicemic symptoms, such as headache, general bodily aches and pains, photophobia, chilliness and low fever, some degrees of cervical rigidity, exaggeration of reflexes, and symptoms of mental and general nervous irritability. Spinal puncture in both these stages yields clear, sterile fluid, containing a substance which reduces potassium permanganate. In the first stage of the disease, potassium permanganate, one in 1,000 solution, as nasal and oral spray gives the best results for the local condition. Later, the usual methods of treatment should be employed, including serum.—N. Y. Medical Journal.

A Clinical Study of Pneumonia in Infants.—Dr. Henry Dwight Chapin of New York read this paper (Amer. Med. Assn. N. Y. Med. Journal, June 15, 1915). He referred to the disappointing results of hospital treatment of pneumonia in children. His experience had been largely in the Post-Graduate Hospital which was located in a densely populated district where one could hardly expect to find much promising material, but the results were about the same in other hospitals dealing with cases of a similar class. The high mortality was due very largely to the poor vitality of these little patients and to the fact that many were not sent to the hospitals until the disease was far advanced—often in the later and most dangerous stages. A large proportion of the cases represented secondary or terminal conditions which were apt to occur after any serions illness in poorly nourished infants. His paper was based upon a study of 50 cases, 23 of lobar pneumonia and 27 of bronchopneumonia. The lobar pneumonia cases gave a mortality of 21 per cent, the bronchopneumonia, 48 per cent. It was not always very easy to differentiate bronchopneumonia from lobar pneumonia. When history showed a slow inception, form of a remittant type, not so constantly high, with disseminated patches over the posterior areas of both lobes, the case was considered as one of bronchopneumonia. In some instances both kinds of puenmonia were present in the same case. Hypostatic pneumonia was practically a terminal condition, Dr. Chapin said, and was not usually recognized during life; it was almost constantly found up to 105 degrees in atropic babies. A notable feature of the series was that a high temperature was well borne. There was a notable leucocytosis in most cases. In some cases not showing a high degree of leucocytosis there was a high polynuclear average. The management of the cases was stimulating and supporting, the drugs employed being strychnine, caffein, aromatic spirits of ammonia, and occasionally digitalis or nitroglycerine. For quick hypodermic effect camphor in oil and sodium-benzoate caffeine were depended upon. For cough and restlessness small doses of codeine sulphate as indicated was given. The drugs were always given singly. One of the greatest difficulties contended with was the giving of proper nourishment. Most of the children were already suffering from digestive disturbances arising from improper feeding before admission, and special treatment was therefore directed toward the digestive tract. This tested all the skill that the physician possessed. Vigorous infants with lobar pneumonia might respond well to fresh cold air but in the speaker's experience the cold-air treatment was not applicable in the bronchopneumonia of infants, but rather plenty of fresh air delivered into the ward moderately warmed. If better results were to be obtained in hospital treatment, pneumonia cases must be admitted earlier and should be discharged as soon as resolution had taken place, since if they were kept too long there was danger of reinfection and relapse. Furthermore, it was difficult to avoid secondary and cross infections when a number of weak infants were collected together in one place. Dr. Chapin's plan was to remove these infants to private homes in the country where provision could be made for supervision by a doctor and nurse as soon as the acute symptoms had subsided.

Icterus in the Newborn as an Infectious Disease.—Pfaltzer (Ztschr. f. Geburtsh. u. Gynak., 1915, Band lxxvi. Heft 3; Amer Jour. Med. Sci.) reviews the reports of cases by Schmorl, Beneke, and Esch, and adds a case under his observation in the clinic at Halle. The child was the fourth of a healthy mother, whose second child was stillborn, the two others living and vigorous. There was nothing abnormal about the pregnancy, labor was spontaneous, the child was born living and cried vigorously. The effort was made to have the child nurse, and as the mother's supply was insufficient the bottle was given, but was not well taken. The child was finally fed with a spoon. On the second day after birth well-marked icterus developed. The child was apathetic and moved but little, the temperature rose at evening to 103 degrees, and at the end of the night the child died. At autopsy, the color of the skin was both icteric and cyanotic. The toes and fingers were drawn in convulsively. The stump of umbilical cord was dry, but the tissues about the umbilicus were infiltrated. Both legs were slightly edematous. There was ecchymosis of the conjunctiva. The ears, nose and mouth showed nothing abnormal. The abdomen was soft and not especially large. The fatty tissue was not in excess, the muscular tissue dry, pale and icteric. In the region of the umbilicus on the inner aspect there was edema; no suppuration was present, and the vein and arteries were normal. The situation of the abdominal organs was normal, and in the region of the head and face there was bleeding into the substance of both temporal muscles. In the longitudinal sinus there was dark fluid blood but none beneath the dura. At the base of the brain there was a peculiar grayish-yellow color, which became deeper in some portions. There was no especially jaundiced color in the convolution of the brain or the medulla, but some other portions were markedly jaundiced. This was especially true in the region of the optic thalamus. The same was true of the medulla oblongata. The hypophysis in its nerve fibres was a deep yellow in color. In the pericardium there was bile-stained fluid. About the tongue the tissues were jaundiced, and there were patches of necrosis on the tongue, esophagus and larynx, deeply colored. The yellow exudate simulated somewhat a diphtheritic membrane. The spleen was much enlarged, dry and dark red. The stomach was dilated and contained colorless mucus. The mucous membrane of the stomach was dark red and showed small portions stained deep yellow. This was also true in the duodenum. The mucous membrane of the bowel was somewhat thickened and dry, the liver not markedly jaundiced, the gall-bladder full of bile, the suparenal bodies very large and grayish in color, the kidneys full of uric acid infarcts, and the urinary bladder stained a deep yellow. There was nothing of especial interest in the muscles. Microscopic examination of portions of the brain and nervous system showed the intense yellow staining of nuclei, which has given to this disease the name of nuclear jaundice, or in German, "kern icterus." Bacteriological examination of the blood was negative, although crystals of bilirubin were present. Bacilli-like staphylococci were found in great abundance in mucus taken from the esophagus. Blood from the heart, spleen and also the bile, was sterile. From the liver was obtained the bacillus coli communis, and this germ was found in the region of the umbilicus, and also in some of the muscles. In searching for the point at which the infection gained entrance to the body, the esophagus was thought to be the point of infection. The diagnosis of nuclear jaundice, or kern icterus, with diffuse myositis resulting from infection by the bacillus coli communis, and staphylococci, was made. The three points of clinical interest which seem to go together, are the presence of the bacillus coli communis, multiple lesions in the muscles, and the changes in the nuclei in the tissues of the nervous system. As regards diagnosis during life, one must observe the presence of jaundice, and when to this is added convulsions or convulsive movements of the muscles, if the patient be an infant, the diagnosis may be provisionally made.

Tumor of the Pons varolii in a Child, without Optic Neuritis.— Dr. J. Ramsey Hune presented before the N. Y. Neurological Society (N. Y. Med. Jour.) a boy, aged seven years, from the third division with the following history: Onset, two months before with headaches which were inconstant and not of great severity, these persisted. One month later there developed deviation of the eyes and a peculiar posture of the head, and at the same time some unsteadiness of gait, with occasional attacks of vomiting. He was sent to the Lincoln Hospital and transferred to the Neurological Institute on February 25, 1915, two months after the onset of cerebral symptoms. The course of the disease has been steadily progressive. He was an only child, and his family history was negative; both parents were alive and well. He had had mumps, chicken pox, and bronchitis, but no other illness. Two years ago he was injured by a truck and suffered a fracture of the leg. In this accident he also received a head injury; recovery, however, was complete.

The child was unable to stand or walk on account of motor weakness and ataxia. There was considerable apathy and dullness, but he was easily aroused and was at times bright and talkative for several hours. The headaches persisted and he vomited occasionally. There was considerable dysphagia and the speech was dysarthric and typically bulbar. He understood perfectly, carried out all directions, and attempted to answer questions; sight and hearing were not impaired (coarse tests). Pupils were unequal and reacted promptly to light and accommodation. Convergence was feeble. There was complete paralysis of the associated movements of the eyes toward the right and to the left; the excursions upward and downward were prompt and normal; no ptosis. Corneal reflexes were present. Doctor Holden reported, on February 22d, optic discs normal; subsequently, March 5th, and agian on March 11th, no optic neuritis. There was a distinct facial palsy of peripheral type on the right side with contralateral hemiplegia. In addition to right facial palsy; there was weakness of the right fifth, with some deviation of the jaw toward the right. The jaw could only be partially opened, owing to spasm of the muscles (trismus). The jaw jerk, however, was active. The tongue was weak and could not be protruded because of fixation of jaw. Palatal innervation could not be tested, owing to trismus. Both arms were ataxic, especially the left. Both legs were weak and ataxic, especially the left. Spasticity of both lower extremeties existed with clonus and Babinski, left greater than right. Pain sensation was keen over face, trunk, and extremities, and was apparently equal on the two sides. There was no Kernig symptom and no rigidity of the neck. Pulse was rapid, 100 to 108 to the minute; respiration 20 and of regular rhythm; systolic blood pressure, 70 to 75; temperature not over 99 degrees F.; urine free from sugar and albumin; Wassermann test negative, both of blood and cerebrospinal fluid; no increase of cells of cerebrospinal fluid. Examination of the heart, lungs, and abdominal organs proved negative.

This patient was presented as having probably tumor of the pons varolii. The local symptoms were characteristic of this localization. i.e., paralysis of associated movements of the eyes, hemiplegia alternans with facial and trigeminal involvement; later, double hemiplegia much more marked upon the left side; bilateral ataxia, dysarthria, and dysphagia. Tumor was regarded as probable on account of the steady progression, the headache and vomiting, and the associated dullness and apathy. The absence of optic neuritis in this case would not militate strongly against the diagnosis of neoplasm, as it was a well recognized clinical fact, that in central tumors of the pons and medulla, optic neuritis was often absent. Indeed, Oppenheim stated in his experience it was the rule. It was thought that meningitis and encephalitis pontis could be excluded because of the nature of the onset, the steady progression, and the negative cerebrospinal fluid findings.

Nonpurulent Secondary Meningitis.—Dr. Walter Timme, of the third division, presented before the New York Neurological Society (N. Y. Med. Jour.) a boy, five years of age, who entered the Neurological Institute, January 10, 1915, unable to walk and complaining of pain in his legs. This had been going on for one week, becoming progressively worse. One month before, on December 10, 1914, he had an attack of vomiting, which continued at intervals for two days. After a physic, this ceased and he felt better. On January 3d, the father noticed the child walked peculiarly, and both legs were tender and painful. A physician was called, who found the child had fever and that a spinal fluid was turbid, and referred him to the institute. Upon his arrival he had a slight rise in temperature, his gait and station were unsteady and uncertain, and his knee jerks were absent. There was a certain degree of rigidity of the neck muscles and a slight Kernig on both sides. There was also a tache cerebrale. All other signs negative or normal, except perhaps some slight atrophy of the lower muscles. At that time the serology was as follows: Clear fluid with forty-seven cells, almost exclusively lymphocytes, and with a negative Wassermann, and positive Fehling reduction. He had a follicular tonsillitis with a slight enlargement of the cervical glands. Four days later, January 14, 1915, the Kernig was still present, the neck rigidity had diminished, and the tonsillitis was gone. His pulse was slow, 68, irregular, and intermittent. During the following days the temperature alternated from normal to 102 degrees F., at which time a unilateral bronchitis came on, which soon disappeared. The Kernig sign had also practically vanished, together with the neck rigidity, and the pulse had become of normal frequency and character. The knee jerks had returned and locomotion had become reestablished with but slight incoordination of gait. A von Pirquet test done at this time was negative. A guineapig was also injected intraperitoneally with the spinal fluid, and remained well and normal in all respects. The spinal fluid, taken at three different times, showed gradual diminution of cellular elements, until the last one of January 22, 1915, showed but twenty-two cells. On January 26th, the boy was practically well. The case, therefore, presented conditions seen usually in mild forms of nonseptic meningitis secondary to toxic influences in other organs of the body. There had been a mild epidemic of gastrointestinal disturbances in this boy's neighborhood; he entered the institute with a follicular tonsillitis and secondary cervical adenitis, and soon thereafter developed a bronchitis with temperature at 102 degrees F. His meningitis was probably a concomitant of this systemic disturbance. The other three possibilities were an aberrant form of anterior poliomyelitis, mild epidemic cerebrospinal meningitis and a tuberculous meningitis. Against the diagnosis of anterior poliomyelitis of the meningitic type, there was the fact that no cases of this disease occurring in January had thus far been recorded; that as the meningitis subsided, no signs of a true poliomyelitis supervened. Against a mild epidemic cerebrospinal meningitis, there was the fact that the fluid, while the patient was at the institute, was never turbid, that there were practically no polynuclear cells in the fluid, and that the specific organism of this disease was not demonstrable in the cerebrospinal fluid. Against the tuberculous diagnosis, was the negative von Pirquet, that the injected guineapigs remained normal, that the boy had improved considerably in the short time at the institute, and that the fluid did not have the characteristic appearance microscopically of that in a tuberculous meningitis. The case fell naturally into that group of mild secondary meningitis which so often accompanied the infectious diseases.

Recent Methods of Treating Diphtheria.—Dr. Frank C. Neff of Kansas City, Mo., presented this communication at a meeting of the A. M. A. (N. Y. Med. Jour., June 26, 1915). After giving a brief summary of the work of Park and Schick, he gave a report of the use of diphtheria serum in 155 cases at the Kansas City General Hospital. The mortality was 5.8 per cent. In the fatal cases the first dose of serum was administered on the third day on the average. The average number of units given at the first dose in the fatal cases was 6,100. Four of the nine deaths occurred within twenty-four hours of admission of the patient to the hospital. In spite of the greater severity of the disease the number of units employed when the serum was administered intravenously was practically no greater than in the milder cases. For the sake of greater security, however, more than was really necessary was given in the mild cases. The average dose in these cases was 6,000 units. In a general way it had been quite universally accepted that diphtheria should be diagnosed and treated at the earliest possible moment, and the delay incurred in getting patients to the hospital was that much time lost. To avoid this delay it had been suggested that the hospitals under control of the municipal health boards should extend their emergency service to include the immediate distribution and collection of culture tubes so that a positive diagnosis could be made and the administration of sêrum begun within twenty-four hours. As regards the administration of the serum, an intramuscular injection gave much more prompt and satisfactory results than a subcutaneous one, and there was no reason why the latter mode of administration should not be abandoned. An intravenous injection gave less discomfort than either an intramuscular or a subcutaneous one. The speaker knew of no contraindication to the intravenous method unless the occasional difficulty of finding the vein could be so called. In the series he had noted 24 cases of serum sickness. Eighty-one children had been tested by the Schick method; in 65 tests in infants under five months only one reacted to diphtheria antitoxin. There was definite evidence that the immunity of an individual might change from time to time, and the author had determined that the occurrence of a negative reaction shortly after exposure was of practical value as affording evidence that the individual lacked susceptibility at that time and that therefore a prophylactic injection of serum was unnecessary.

PEDIATRICS

Vol. XXVII AUGUST, 1915 No. 8

EDITORIAL

GROWTH IN HEIGHT AND WEIGHT OF CHILDREN

On this question opinions somewhat differ, so that a paper containing the conclusions arrived at by the best authorities together with copious statistics bearing on the matter, written, too, by a man who is himself thoroughly conversant with his subject, should be a valuable addition to the literature of pediatrics. Such a paper has recently been published in the American Journal of Psychology, by Professor Burk of Clark University. In the limited space at our disposal it will be, of course, impossible to do more than briefly allude to a few of the most important facts given. Professor Burke begins by stating that growth in height certainly matures before growth in weight, and then goes on to say: The average length of a new-born male infant has been generally taken as 19.68 inches, and about one-fifth inch less for females. During the first year the child grows at the most rapid rate of its entire life. The average increase in probably between seven and eight inches. The rate of growth decreases rapidly from month to month of the first year, and in general it may be said that the rate decreases with age. The rate of growth for the first six years is practically the same for both sexes. Between six and sever years of age the average American child measures about forty-four or forty-five inches. It is a question whether height or weight is the better index of fundamental growth conditions. Donaldson decides in favor of weight, for the reason that while the body increases in stature from birth to thirty years only 3.37 fold; in volume, the increase is 20.66 fold. This view, however, is not held by most anthropometrists, who are rather in favor of using height as an index, The average weight of a male at birth may be put at 7.3 pounds and of a female at 7.1 pounds. The development by weight seems on the whole to follow the law of development in height The weight at birth is almost trebled during the first year. Perhaps the most instructive portion of the paper is that refering to seasonal growths. Malling-Hansen says the weight of a nine to fifteen year old boy has three periods of growth during the year—a maximal, a middle, and a minimal. The maximal period begins in August and finishes in the middle of December, lasting, therefore, four and a half months. The middle period extends from the middle of December to the end of April, four and a half months. The minimal period extends from the end of April to the end of July, therefore three months. During the maximal period, the rate of increase in weight is three times as great as in the middle period. Almost the whole weight gained in the middle period is lost during the minimal period. Lastly, Melling-Hansen also finds that children increase in weight and decrease in height by day, and increase in height and decrease in weight by night.

MOTHERCRAFT AND ITS INFLUENCE ON INFANT MORTALITY

Although in civilized countries, through the employment of more intelligent methods in rearing infants, infant mortality has been considerably decreased, yet it is, at the present time, higher by far than it should be. This, of course, is due to a variety of causes, chief of which is faulty nutrition. If breast feeding were universal, or if it were carried out whenever it could be carried out, then infant mortality would go down steadily and moreover children would be much healthier. To bring about this desirable object, and educational propaganda must be set afoot, and especially amongst the poor, for while perhaps, the rich women and those of moderate means are as great sinners in so far that they do not feed their offspring by natural means, on the other hand, they are less amenable to instruction. Besides, the well to do, even if they do not comply with nature's laws as regards feeding their infants at least provide, as a rule, artificial foods which are fair substitutes for mother's milk and, in other respects, bring up children under good hygienic conditions. But the poor are handicapped in every way, ignorance is an obstacle hard to overcome, environment stands in the path of reform and therefore the only possible manner in which these difficulties can be surmounted is by teaching the poor how to rear young children as they should be reared.

This country lags behind some European countries in the initiation and development of educational methods of this character. First, in Belgium and in France means were introduced to teach poor women mothercraft. The late Professor Pierne Budin in his Clinique Tarnier demonstrated that good management was the main factor in the prevention of infant mortality, and the same has been proven up to the hilt at the school for mothers in Ghent. Great Britain was the next country to take up the teaching of mothercraft and to improve upon the systems established in France and Belgium. In all these countries the results have been almost astonishing. During the past fourteen years the death-rate among infants has steadily fallen in England and Wales and in France and Belgium the outcome has been equally satisfactory. As Dr. Eric Pritchard has pointed out, infants will live and thrive in spite of poverty and bad sanitation, but they will not survive bad mothercraft; and this is the discovery that schools for mothers have made, and the secret of the huge fall in the mortality rate of infants during the past ten years. Schools for mothers teach all that is concerned with the proper rearing of infants. Expectant mothers are fed at such places for some time before their confinement so that they may be in a good condition when this time comes and the infant will benefit by this ante-natal hygiene. After the child is born mothers are instructed how to feed it and care for it. Great stress is laid upon the necessity for breast feeding whenever possible and in the event of mother's milk not being available, the best kind of artificial feeding is employed or recommended. Not only is such instruction given at the schools for mothers, but visitors skilled in the most efficient modes of rearing infants are sent from the schools to the homes of the mothers to teach them all the details of infant management. As said before, the results have been remarkable, and it would be in the best interests of public health if a similar system was inaugurated in the big cities of this country.

THE INFLUENCE OF THE MIDWIFE ON INFANT MORTALITY

Lack of proper management of the labor of childbirth and of good care of the mother and child after, are responsible for a considerable part of the large infant mortality which characterizes this country and many other countries. According to Manggold about one-half of all births are attended by midwives, 90 per cent of whom are said to be inefficient. It is to be hoped that these statements are exaggerated, although there is little doubt that want of skilled aid during confinement and careful nursing after are factors of much moment in the causation of infant mortality. This being so, it is in the interests of public health, indeed imperative, that midwives should be thoroughly efficient in carrying out their duties. Taking into consideration the fact that the midwife has a most important duty both to the mother and child at the critical time of birh. it is therefore essential that it should be known how many mothers and infants are cared for by midwives alone, and with what results so far as they are concerned. In Great Britain the Midwives Act, 1902, has been successful in making midwives more efficient by far than they were formerly, and they are now carefully supervised by lady inspectors who see that they carry out the requirements of the Act and the rules of the Central Midwives Board. who examine and control midwives. Thus the standard of midwifery has been considerably raised as the local supervising authority has power to censure or suspend any midwife for neglecting to comply with the rules of the Central Midwives Board.

The duties of the midwife call for skill which can only be gained by a comparatively lengthy training. She has to examine the pregnant mother at intervals before the confinement. She must be competent to diagnose all dangers which may threaten the mother and child during pregnancy.

With regard to the baby, the midwife has a great responsibility. She must overcome the difficulties concerning breast feeding and if breast feeding is absolutely out of the question it is the duty of the midwife to advise as to how the infant shall be fed.

It may be said that in France, Italy, Belgium and Hollond two years' training for midwives is demanded. In England only three months' training is called for.

In America the midwives question is as important as in any country. It has been noted already that the situation in this respect in New York is most unsatisfactory as it is, to a greater or less extent in all parts of this continent. There must be midwives, for the reason that a very large number of persons cannot afford to pay physicians' fees. Consequently steps should be taken by state authorities to insist that midwives should be property trained. It is really a very serious matter and one upon which the welfare of a nation very largely depends. Much of the blindness which afflicts infants might be avoided if the midwife was able to diagnose the condition and procure proper and prompt treatment, and the same remark applies to several diseases. Also, the proper nutrition of the baby is of the utmost importance, and it rests with the midwife to see that the feeding is carried out intelligently and scientifically.

GASTRIC CANCER IN A BOY OF 9.

Dr. F. Karl reports this case in Deutsche Med. Woch., March 25.

The child had never been strong and during the last three or four months had vomited often until he was too weak to stand. A knobby cancer, as large as a child's fist, was found at the pylorus and the region resected. The stump of the stomach was implanted in the jejiunum. He bore the operation well and in three months was plump and ruddy, having more than doubled his weight, from 28 to 59 pounds, by March, 1915. The ultimate outcome, of course, is dubious, as cancer in the young is exceptionally malignant.

PEDIATRICS

ORIGINAL ARTICLES

SUMMER DIARRHOEA*

BY EDMUND CAUTLEY, M.D., F.R.C.P.
Senior Physician to the Metropolitan Hospital and to the Belgrave Hospital for Children

This epidemic type of diarrhoea is more or less prevalent in the latter part of summer and early autumn, especially if the weather has been hot for a prolonged period. It is known by various names indicative of its etiology and characters, viz., infective, inflammatory, febrile, toxic or fermental, or epidemic diarrhoea; zymotic or epidemic enteritis; cholera infantum, cholera nostras, English cholera or choreraic diarrhoea. Summer diarrhoea should not include all cases of diarrhoea occurring in summer. The name might be limited to that class of case in which no serious anatomical changes are found in the mucous membrane, even in fatal cases, except those of an inflammatory or ulcerative nature secondary to prolonged attacks. On the other hand, epidemics of infective colitis or ileo-colitis occur in which profound changes are found in the colon. Probably the distinction is merely dependent on the nature of the infective organism. In both classes the treatment is essentially the same. In some instances the attack is due to toxins ingested in the food. More often the toxins are formed in the intestinal tract or in the blood and tissues by organisms after ingestion. Thus we may have to deal with a pure toxemia, a blood infection, or a combination of infection and toxemia.

Although summer diarrhoea occurs at any age, it is far more common and much more severe in infants from three months to two years of age, and is rarely dangerous after the fifth year. The main etiological factors are the food supply and the environment of the child. Intestinal catarrh, the result of unsuitable food, clothing or hygiene, rickets, measles, intestinal parasites, etc., is a predisposing factor. So, too, is hot weather, for it impairs digestion, lowers vitality, increases dust and decomposition, and encourages the luxuriant proliferation of micro-organisms in foods. Flies act as carriers of the infective organisms to the food, or more directly to the child's lips and nostrils.

---

*Medical Press and Circular, July 14, 1915.

In babies artificial feeding and dirt are the chief factors. Attacks are relatively rare, and not often severe, in breast-fed infants and among those in good social surroundings. Among the poor, milk is often of bad quality, lacking in freshness, contaminated before and after it is bought, given in unsuitable proportions and improperly prepared, and in bottles dirty or imperfectly cleaned. The child's clothing is dirty, its "comforter" hangs by a dirty string and makes frequent excursions on to a still dirtier floor, perhaps being cleaned by suction in the mouth of a mother or sister with carious teeth; and on a hot day flies are numerous and infected dust is freely blown in from the street. No wonder the disease is prevalent; the marvel is that any slum child escapes. Probably slight attacks induce immunity and the fittest survive.

The organisms more commonly incriminated are those of the Gaertner group of bacilli, easily destroyed by exposure at 60° C. for thirty minutes, though their spores are extremely resistant. The most important are the B. enteritidis (Gaertner), B. enteritidis (Aertrycke; probably identical with B. suipestifer), B. enteritidis sporogenes (Klein), and the paratyphoid-b. bacillus. Less frequently non-Gaertner, aerobic organisms are at fault, e.g. B. coli and proteus; or various streptococci, B. pyocyaneus, Morgan's bacillus and B. dysenteriæ. Most of these organisms live on proteins, while some are facultative and can live on carbohydrates as well.

Symptomatology.—The nervous symptoms, due to toxemia chiefly, though some may depend on the rapid loss of fluid from the system, are of sudden onset, especially when due to toxins in the food before ingestion. They may be out of all proportion to the diarrhoea and vomiting, signs which at first may be slight or absent. Occasionally death ensues before these signs develop. Restlessness, sleepness, depression or prostration, vomiting, cardiac collapse and fever may be due to toxemia alone. Or the vomiting may be partly reflex and the restlessness consequent on thirst. Mild cases at first simulate an attack of diarrhoea and vomiting due to unsuitable food, with fever up to 100-102° F. But in a short time five or six greenish stools are passed in twenty-four hours, and perhaps blood and mucus. Recovery ensues in a few days, or the case develops into one of the more severe type, with T. 102-104° F. and marked toxemia. Vomiting is severe, often continuous, perhaps uncontrollable. Thirst is often extreme. The stools consist of dirty green water, sometimes vivid green, occasionally mucus and blood, and are often horribly offensive. The child is extremely restless and irritable, but rapidly develops drowsiness and prostration. The fontanelle becomes sunken and pulsation barely perceptible. And, finally, a hydrocephaloid state ensues with coma-vigil, earthly pallor or cyanosis, shrivelled features, sunken eyes, inelastic skin, dry lips, and death from respiratory failure, perhaps with "agonal" convulsions.

In the choleraic or fulminating attacks the onset is sudden and toxic symptoms are very severe. They occur in strong healthy infants, as well as in the weak and delicate. A fine, healthy babe may become a shrivelled moribund wreck within a few hours, even without diarrhoea. At first he is irritable and prostrate. Soon he becomes dull and apathetic. Thirst is extreme, but even water is almost immediately vomited. The stools rapidly become watery, odorless and colorless, like those of true cholera. The temperature rises to 104-106° F., perhaps there is hyperpyrexia, or a sub-normal temperature due to collapse. Three-fourths of these patients die in a few hours or days in a state of coma or convulsions.

Prognosis.—Prognosis must always be guarded, even in mild cases, for some of these quickly become dangerous. The chief bad symptoms are high fever, persistent vomiting, restlessness, prostration, collapse and convulsions. In cases of moderate severity the fever subsides within a week, and recovery slowly ensues under proper treatment. Some become chronic and terminate in marasmus, although food is taken well and apparently digested, though not assimilated. Perhaps there is atrophy of the gut or secretory glands, persistent enteric catarrh or chronic colitis. Edema, petechial hemorrhages on the abdomen and elsewhere, broncho-pneumonia or pulmonary collapse are terminal events. Thrush, otitis media, broncho-pneumonia and cerebral thrombosis may occur during the acute stages.

Treatment.—Although the methods described are suitable for all children, the dosage recommended is that appropriate for the first year of life. Prophylactic measures are those of ordinary hygiene. Breast feeding should be insisted on during hot weather, and, if artificial feeding is imperative and good milk unobtainable, it is often advisable to prescribe a dried or condensed milk until the dangerous period is passed. Sponging with tepid water two or three times a day is also beneficial. In no disease does the principle "obsta principis" apply more strongly. The slightest attack of diarrhoea, and even the passage of imperfectly digested stools, should receive adequate treatment with drugs and diet. A dose of ol. rincini, calomel, grey powder or sod. sulphate, combined with temporary starvation and regulation of the diet cures cases of this type and prevents the development of the intestinal catarrh so provocative of more serious attacks.

The general treatment of a more severe attack depends on elimination and starvation, the maintenance of warmth, the prevention of further infection, the arrest of vomiting and diarrhoea, and the victory over collapse.

Stop all food by the mouth and give children a full dose of castor oil or calomel. For babies give castor oil dr. i.-ii; or calomel gr. 1/24-1/6, alone or with sod. bicarb. gr. ½-2, hourly or half-hourly until 1-½ grs. have been taken: following with a dose of one to three teaspoonfuls of milk of magnesia in two or three hours' time. Sodium sulphate, gr. x, every ½-1 hour for 4-6 doses is very suitable for babies over nine months of age, as it does not cause vomiting and it flushes out the bowels. It is indicated if the temperature is high, but should not be given if there is a low temperature, sunken fontanelle and great debility.

If the vomiting is severe, wash out the stomach with normal saline or sod. bicarb. sol., dr. i. to the pint of hot water, at 105-110^0 F., inserting a dose of ol. rincini before withdrawing the tube. Should this fail, repeat the lavage and give calomel gr. 1/12-1/6 every half-hour alternately with tr. iodi m.*, water dr. i. Creosote, m. 1/6, can be added to the mixture. And a mustard leaf may be applied to the epigastrium for a short time.

Irrigation of the colon with normal saline, boracic acid 1 per cent solution, or sod. bicarb. solution should be carried out in severe cases. Use a long, small, soft rubber catheter and insert it as far up the colon as possible. With the buttocks elevated and the child on its back, run in 5 oz. at 105-110° F., very slowly, and repeat the process until the fluid returns clear. Rectal irrigation can be repeated every twelve hours, but is not advisable in profound prostration, though an injection at 110° F. may be given for collapse. If there is high fever, use the irrigating fluid at 90-100° F., and even as low as 60-70° F. for hyperphyrexia. There is no advantage in the addition of glucose, lactose or sucrose, sometimes recommended in amounts of an ounce to the pint, for it is very exceptional for infants to retain rectal injections.

Collapse is relieved by hot fomentations to the previously oiled abdomen, a mustard leaf to the precordium, and a mustard pack or bath. Packs are better than baths for babies and young children. Wring out a towel in a quart of tepid water and a tablespoonful of mustard. Wrap it round the trunk, cover with a blanket, and leave it on for 5-15 minutes or until the skin is reddened, remove and put on a cotton wool jacket. Stronger mixtures of mustard can be used.

By the mouth give brandy m. iii.-xv. in hot water at intervals of 1-3 hours; sp. ammon. aromat. m. iii.-v.; sp. camphoræ m. v.-x.; ether m. v.-x.; or caffein. citrat. gr. 1/8-1/2.

Subcutaneously give liq. strychninæ m. 1/8-1/4 every half-hour or hourly; adrenalin sol., 1 in 1,000, m. ii.-x. hourly; camphor 1, olive oil 30 parts, m.v.-x; or ether or sp. ammon. aromat. m. v. in extreme stupor.

Subcutaneous saline injections (0.9 per cent strength) aid elimination and combat collapse. Introduce the fluid quite slowly at T. 100°-105° F., into the loose cellular tissue in doses of 2 ounces every six hours. A thermos flask is a useful receptacle for keeping the fluid at a proper temperature during injection. Sugar, oz. i., can be added to a pint of saline. Marfan recommends four-hourly injections of dr. i.-iv. of caffein citrat. 0.75, sod. chlorid. 2.50, sterile water 300.

In very bad cases the fluid can be injected intraperitoneally in amounts up to 6 oz intravenous injections of 2.5 per cent dextrose in normal saline are difficult to carry out in babies.

Bathing.—Sponge if there is much fever, or give a cold pack or an alcohol pack, using equal parts of brandy or alcohol and water at T. 90^0 F. If the child is very restless and not too ill, give a hot bath very gently for 5-10 minutes night and morning. Cleanliness is essential and the nurse must be very careful to wash her hands after changing the diapers and before preparing the food or feeding the child.

Diet.—Give water, toast water, weak China tea, hot or cold in doses of dr. i.-iv. every 15 minutes or larger doses hourly, sweetened with saccharin if necessary. Even if vomited it washes out the stomach. Continue this for 12-24 hours. Then give 5 per cent lactose solution for 1-3 days, and after this 5 per cent lactose in barley water. I have known food withheld for ten days. To my mind this is wrong treatment, for if there is no food in the alimentary tract, the proteolytic organisms will live on the mucus and other secretions. The dangerous organisms are mainly those which live on protins; some of them can live on carbohydrates and only live on proteins when carbohydrates are not available. Lactic acid and products of carbohydrate disintegration are not dangerous and have the further advantage of inhibiting the growth of the proteolytic bacteria, thus limiting putrefaction. Lactose forms dextrose and galactose, and is the most easily assimilable carbohydrate.

Ilbumin water, meat juice and albuminous foods should be prohibited if there are toxemic symptoms. Meat extracts, e.g., chicken and veal tea, Brand's essence and Valentine's meat juice, are less dangerous for they supply salts, which are being freely drained away, and contain little albumin. They are stimulants rather than foods.

After two or three days of a diet of lactose and some cereal decoction, one of the milk proteins can be added, e.g., a dried casein or whey powder in amounts of 0.5-1.5 per cent. After this, peptonized milk and barley water, p.a. can be tried. Other suitable foods according to the age and circumstances of the child, are whey made from whey powder or milk sweetened and unsweetened condensed milk, butter milk and Koumiss, Allenbury No. 1 food, Horlick's Malted Milk, Glaxo or other dried milk, and Eskay's aluminumized food. Older children can pass gradually on to arrowroot and cornflour gruel, milk and barley water, rusk and milk, bread and milk, dry toast and butter, baked custard, junket, milk puddings, boiled egg, bread and butter, potatoes and gravy, fish and finally meat.

It is very important to go slowly in the matter of diet and to go back to the simpler foods if there is the least sign of imperfect digestion. Water, Malvern water or Vichy water, can be given freely. White wine whey is often useful.

Drugs.—During the acute stage, if there is severe abdominal pain, Dover's powder gr. 1/8-1/4 can be given with calomel every 2-3 hours for five or six doses. As a rule opium is inadvisable at first, for the diarrhoea is eliminative. If it is prolonged and severe, tinct. camph. co. m. v.-xx. or tr. opii m. 1/4-i. may be added to the medicine at one year of age, or preferably given separately every 2-4 hours according to its effects. After the preliminary purgation, give a mixture of bismuthi carb. pulv. acaciæ, glycerine aa. dr. i. aq. cinnam. vel. aq. carui ad 2 oz., in doses of dr. i. every 2-4 hours. To this may be added ac. carbolici gr. i.-iv., tr. camph. co. m. xxx.-lxxx., and sod. bicarb. dr. i. Pulv. cret. aromat. is sometimes more useful than bismuth. Antiseptics are of little value. Big doses are dangerous and little ones useless for the destruction of micro-organisms. Salol gr. i.-ii. every two hours is the best, and next to this come carbolic acid, beta and benzo-napthol, creosote and the sulpho-carbolates of soda, lime and zinc. To a certain extent they are useful in combating excessive foetor and flatulent distension.

On the whole, the best results are obtained by careful nursing, strict attention to diet, warmth, thorough elimination and the special measures recommended for the treatment of toxemia, vomiting and collapse. Vaccine therapy and serum injections up to the present have not proved curative.

LARGE INFANTS

BY A. R. BIZOT, M.D.
Louisville, Kentucky

The average weight of the normal infant born at term, according to the majority of the text books on obstetrics and pediatrics, should be about seven and one-quarter pounds, but this rule to which there are some curious exceptions. For instance, Sir Edward Home (1824) records the case of an infant born at term, which weighed one pound. This child lived to be nine years old. Moore (1880) refers to an infant which weighed at birth one and a half pounds. The child was living and well at the age of fifteen months, and then weighed eighteen pounds. Mursick (1874) describes a living child which at birth weighed one and three-quarters pounds. A Michigan woman (1874) gave birth to twins whose weight was approximately three and a quarter pounds, one weighing one pound and eight ounces, the other one pound and twelve ounces. They were less than eight inches long, but alive and extremely vivacious. At the Samaritan Hospital, Philadelphia (1896), a child was born which weighed one and three-quarters pounds.

Going to the other extreme, the literature contains the records of infants weighing nearly twenty-five pounds at birth. Such large children, however, are exceptional as shown by the fact that in over thirty-six hundred consecutive births at the Rotunda Hospital (Dublin) there was only one infant which weighed eleven pounds. Among the older writers, Cranz describes a child which at birth weighed twenty-three pounds; Fern mentions one weighing eighteen pounds; Mittehauser speaks of a newborn child weighing twenty-four pounds; and von Siebold one of twenty-two and a half pounds.

More recently Warren (1884) delivered a woman of twins, one of which weighed seventeen pounds and eight ounces, the other eighteen pounds. The placenta weighed four pounds, and there was an ordinary pail full of liquor amnii. Burgess (1875) mentions a newborn child weighing eighteen pounds, and Meadows (1860) records a similar instance. Eddowes (1884) speaks of the birth of an infant which weighed twenty pounds and two ounces, the mother having borne two very large children previously. Chubb (1879) delivered a woman of an infant which weighed twenty-one pounds. Dickinson (1894) describes a woman who was delivered of her third child, which weighed sixteen pounds. Her first weighed nine pounds, the second twenty pounds. Rice (1878) speaks of a child weighing twenty and a quarter pounds at birth. Johnston (1881) describes an infant weighing twenty pounds when born, and Smith (1878) another of the same weight. Baldwin (1894) quotes the case of a woman who after three miscarriages gave birth to a child weighing twenty-three pounds.

Beach (1879) describes the birth of a young giant weighing twenty-three and three-quarters pounds. The mother was Mrs. Bates, formerly Anna Swann, the giantess who married Captain Bates, of Kentucky. Labor was slow but she was successfully delivered of a healthy child weighing twenty-three and three-quarters pounds and thirty inches long. The secundines weighed ten pounds, and there were nine quarts of amniotic fluid.

A Caesarian section was performed (1891) upon a woman of forty in her twelfth pregnancy and one month beyond term. The fetus which was almost exsanguinated by amputation weighed twenty-two and a half pounds. Bumm (1895) speaks of the birth of a premature infant weighing about ten pounds. Three preceding children had been stillborn on account of their large size.*

Stickle (1904) records the case of a woman of forty-five weighing two hundred and seventy-five pounds, whom he delivered in 1901 of a dead monstrosity weighing sixteen pounds. In 1902 she was delivered of a living child weighing twelve pounds. After a difficult and prolonged labor he delivered this woman in 1904 of an infant weighing twenty-one and a half pounds which had probably been dead about forty-eight hours.

I recently delivered a woman aged thirty-six of her fourth child. I had attended her in three previous labors in which forceps had to be used. The first child weighed nine pounds, the second nine and a half pounds, the third ten and a half pounds, and the fourth twelve pounds. Forceps were not used in the last delivery, but chloroform was administered, the labor being somewhat prolonged and the pains severe. During each of the three instrumental deliveries there occurred more or less injury to the soft parts which were immediately repaired, but none during the last delivery. The infant was a perfectly normal male, the funis separated on the fifth day, and I saw the child on the seventh. They were Jewish people and the baby was circumcised on the eighth day.

I saw nothing more of the child until called in consultation some time afterward. It appears that on the eleventh day the baby became ill and they sent for a specialist in the dis-cases of children. On the twenty-first day after birth I was asked to see the child in consultation with the specialist. In the meantime, however, they had consulted another physician and also a surgeon. The umbilical stump had become infected, and the child was in a general septic condition. Both knees were markedly swollen and tumefied, especially the left from which three and a half ounces of pus was removed by incision. A needle was introduced into the right knee, but no pus found. There was a large abscess at the base of the left thumb, which was opened and evacuated. No anesthetic was necessary in the performance of these trivial operations. Dr. Leon K. Baldauf made cultures of specimens of the pus from the knee and the thumb abscess, and found staphylococci in abundance. The child about this time developed the characteristic symptoms of pneumonia. There was also something abnormal at the sterno-clavicular articulation, it appeared loosened, and a sound which seemed like crepitus could be obtained The child died the following night of septic pneumonia.

---

*For the majority of these older data the author is indebted to the admirable work of Gould and Pyle, "Anomalies and Curiosities of Medicine."

This case is reported mainly for the reason that a physician who was present at the time the child was operated upon remarked that he thought "twelve pound babies (and over) were only seen in books, not in reality." After this child had been ill two weeks its weight was ten and a quarter pounds, although at birth it had weighed exactly twelve pounds.

The case further emphasizes the fact that we should not consider our work completed when the woman has been safely delivered. We ought to watch the child for several weeks after birth and be certain that it is entirely well before the case is dismissed. This child was delivered at the woman's home, but was later taken to the Jewish Hospital. I saw the baby at three o'clock in the afternoon, and operated upon it at four; the septic condition had already become general and death promptly ensued.

Dr. J. B. Richardson, Jr.—As regards the weight of infants at birth: The observation is not unusual in this part of the country that a newborn babe is found to weigh ten or eleven pounds. While at Sloane Maternity Hospital, New York, some years ago, I spoke of children in Kentucky weighing ten pounds or more when born, and one of the obstetricians there said I must be mistaken, as the records of that institution showed very few children of that weight.

PROPHYLAXIS IN SCARLET FEVER*

BY GEORGE L. SERVOSS, M.D.
Reno, Nevada

Until within recent years, practically the only steps taken to prevent scarlatina have been those of isolation and quarantining the patient and those associated with him. It has been generally believed, by the public at large, that this is one of the diseases that must attack the individual at one time or another, consequently let the individual have it as young as possible, thus conferring a continued immunity thereafter, and for all time.

Such a plan might work out all right were it not for the fact that scarlet fever is one of our tricky diseases—one which may result disastrously, even though the patient be given the most particular care by the physician in charge. I have seen cases of nephritis following seemingly mild scarletinas. We have seen the incidence of ear complications which were not pleasant. In fact we have noted various complications and sequels of the disease, which we would rather not have happened.

We all know that there are typical cases of scarlatina, in which there is but little other than a sore throat, and that a proper diagnosis is not made, for lack of pathognomonic signs of the disease, other than the throat involvement. We likewise know that these unrecognized cases have very frequently led up to considerable epidemics, with not infrequent disaster in the end. It would be all right for every person on the globe to have an attack of scarlatina, thus conferring a continued immunity, were it not for the fact that it is not always a simple disease—one without complications and sequels, and these so frequently serious. But there are these things to contend with in many instances. We see patients go down to death, who have seemingly, throughout the disease, not been seriously ill, but who develop a nephritis or other sequel which they can

*Read before the Washoe County Medical Society, in Reno, Nevada, May 4, 1915.

not battle against. Or we see others incapacitated and for a considerable time, if not for life.

Bearing all these things in mind, there is every reason why efforts should be made to abolish the incidence of the disease. Not only should they be made for the reasons already enumerated, but for the additional reason that an epidemic of the disease may work a hardship on every member of a community, whether stricken or not. When scarlatina is very prevalent, the schools are closed, and that is a serious loss to every pupil and in some instances has acted to take the child into business or other line of endeavor a year or more later than would have otherwise been the case. During local epidemics, business is interfered with to a greater or less extent, churches and places of amusement are closed, and the people move about, usually in fear and trembling. Not only is the disease a menace to the community, but it frequently happens that it means a considerable monetary loss.

Can we do anything to immunize our people against scarlatina? Is it possible for us to practice any prophylactic measures which will wipe out the disease, or at least overcome the tendency to epidemics? Is there any way in which we can give specific immunity? If these things are possible what course shall we pursue?

As yet, we are told that the exact etiologic factor of scarlet fever is unknown, but that it is probably due to a certain strain or strains of the streptococcus—that that organism is usually found associated with the disease.

Acting upon this knowledge, certain investigators and those who thought it possible to either check the disease, as to epidemics, or to wipe it out completely, have employed vaccines or bacterins made from killed streptococci, as well as antistreptococcic serum. These will be given attention later on, after general prophylactic measures have been considered.

The time has now come when it will be necessary to refer to authorities on preventive measures and while it will not be my intention to quote verbatim therefrom, I will take most of my notes from Rosenau's Preventive Medicine and Hygiene:

"Prophylaxis in scarlet fever must necessarily be in excess of the requirements, awaiting a more precise knowledge of its cause and modes of transmission. The essential features of prevention consist in isolation and disinfection. It is important to recognize the mild cases in schools through efficent medical inspection. The answer to the question whether schools should be closed when scarlet fever breaks out varies with circumstances. In country districts this is advisable, as the children may be kept separate, but in the cities little is gained. There is no objection to treating a case of scarlet fever in the household, provided a suitable room and trained attendant may be had. The infection may be confined to the sick room, but it is preferable to take no chances and send the susceptible individuals out of the house. The nurse should use the precautions described for diphtheria, smallpox, or measles. The physician should wear a gown and thoroughly disinfect his hands and other exposed parts after the visit. Special care should be taken with the thermometer and other instruments. The physician may find the necessary precautions and disinfection to be irksome, but they should not be shirked in justice to his other patients and the community.

"The discharges from the mouth, nose and respiratory passages, etc., should be collected upon suitable fabrics and burned. Bed and body clothing, dishes, and other exposed objects must be disinfected. Care must be taken concerning remnants of food from the sick room.

"Scarlet fever is not as highly contagious as measles, but the measures employed should be practically the same until we have more definite knowledge concerning the channels of entrance and exit of the virus and its modes of transmission. The virus of scarlet fever is more resistent than that of measles. It clings persistently to clothing and various objects. A terminal disinfection with formaldehyde gas may be practiced, although little seems to be gained thereby. A thorough cleansing of all surfaces, with a good sunning and airing of the room is always in order. All fabrics and other objects that have been exposed should be disinfected. The virus is killed with agents that destroy non-spore-bearing bacteria. In Glasgow a sanitary wash house has been established, where the clothing of scarlet fever cases may be disinfected and washed. This is a commendable example that might be followed with advantage by other cities."

You will notice that Rosenau recommends that the gown be worn by the physician, but he goes no further. This garment is, in some instances, more a menace than a protection to the public. I have seen some men wear the same gown during their entire rounds of calls, and it has had no particular care at any time. No effort has been made to protect the public from contact with it. I have seen a doctor come from a case of scarlatina, roll his gown up and throw it in the back of his automobile and then invite his friends to ride with him. I have seen doctors come away from cases of the disease and go on with their work and without washing their hands, even with soap and water. The gown is all right, providing it is properly worn. If not, it would be better that the doctor simply view his patients at a distance and keep his hands off—off everything in connection with the patient, whatsoever. I went through a seige of scarlet fever recently without wearing a gown and no new cases were charged to me. Among the other practitioners there was one who wore such a garment—one gown for all cases, and it was handled much as has been described above. He had several new cases and the charge was undoubtedly valid. I had an associate in several of my cases, and like myself, he did not wear a gown and he came out of the epidemic with a clear slate. I would suggest a water-proofed garment, such as is worn in attendance on smallpox—one which may be hosed down and washed with antiseptics. Such a garment would be practically safe, even though carried from case to case. Such a gown could be carried in a sterilizing grip with formalin as the disinfecting agent, but after being washed down with antiseptics it would undoubtedly be safe without further attention. I gave some attention to the action of some of the doctors in a smallpox epidemic in Illinois in 1901, where most of them wore a waterproof coat while making their rounds, and do not know a single instance wherein they were charged up with any new cases. Ordinarily, I believe the wearing of the gown has the tendency to make some men careless. At least that has been my observation in several instances.

As regards the use of streptococcic bacterins to secure a specific immunity, there is seemingly the same wide variance of opinion as exists regarding the use of all bacterins or bacterial vaccines. Some authorities seemingly uphold their use in this connection, while others say, and some emphatically, that they should never be employed. However, as in all other things in medicine, we must accept, as seemingly true, the findings under certain circumstances, until they are proven otherwise. Rosenau gives a page or more to specific immunity against scarlet fever through the use of strepto-bacterins. Some little time since, for another purpose, I went over the literature on this subject, and shall take the liberty of giving such findings, some of which would seem conclusive. You will understand that, thus far, I have not personally applied the practice and that what I may say is in no way original.

Gabritschewsky obtained good results in the prevention of scarlet fever by the use of streptococcic bacterin. His work was based on that of Klein and others, who had shown the importance of the streptococcus as the causative agent in scarlatina. He claimed that after three doses of the bacterin—usually after two doses—complete immunity was established against the disease. This immunity is not complete until five to seven days after the last dose, although a relative immunity probably exists from a week after the first injection. The immunity lasts probably anywhere from six to eighteen months. Twenty-four hours after the first injection there appears at the site of inoculation an area of redness, which is slightly tender, and lasts from one to three days. Rarely there is some headache, or general malaise. In 10 per cent of the cases there appears an erythema over the body, resembling a very mild scarlatina eruption. After the second and third injections, which are given at intervals of a week, there is usually no reaction.

Smirnoff used bacterin in thirteen small villages in Russia, where the sanitary conditions were very poor and where there was no possibility for quarantine. In the villages in which he used it no new cases were reported two weeks after the treatment was instituted, while in other villages the epidemics continued for upward of two months. In these villages Smirnoff inoculated 127 children, of whom only five took the disease, three of them being infected before the second inoculation; 91 children were not inoculated, and of these 36 were infected with scarlet fever, being about 40 per cent. Altogether he inoculated 455 persons, and among these there were only seven cases; five of these occurred after the first injection, two after the second and none after the third. There were no deaths among the inoculated cases, as compared with 11 per cent mortality among the uninoculated.

Yemelanoff reports an epidemic in which eight or ten new cases were being reported every day and nearly every house in the village was infected. Quarantine regulations could not be enforced; 610 cases were inoculated and of these not a single one contracted the disease. It was possible to keep the schools open, even though the children came from infected houses.

Dorofeyeff reports the results in three small villages. He injected 142 persons, two of whom took scarlet fever after the first injection. There were no cases after the second injection. These two cases were both very mild and without complications, although in the uninoculated cases 80 per cent had nephritis.

Zelikin reports a severe epidemic in which there had been 210 cases, with a mortality of between 30 and 40 per cent. He inoculated 741 persons. Four had scarlet fever, all before the second inoculation.

Lifshits, during a severe epidemic, inoculated 170 cases. Only three of these took scarlet fever, all after the first inoculation.

Nitikin inoculated 783 cases, among whom there were only eight cases of scarlet fever, all being in persons who had received only one inoculation. In the villages where inoculation was not practiced, 16 per cent of the children had the disease, while in the villages where it was practiced only 1.4 per cent took the fever.

Akaparoff reports 308 inoculations, with three cases of scarlet fever, all after the first inoculation.

Perwoff reports 282 cases inoculated, only two of which took the disease, both after the first inoculation.

Neurzoft inoculated 173 persons exposed to scarlet fever, and only two cases occurred among the series, both occurring the second day after inoculation.

Schwarin inoculated 497 cases, only two of which subsequently took scarlet fever.

Dobensky injected 132 cases, none of which took the disease.

Langovoy inoculated all persons admitted to a hospital in Moscow, where during the four previous years 3 per cent of the children in the wards had had scarlet fever. Since the inoculation treatment, covering a period of several years, only four cases among 309 patients developed scarlet fever, a little over one per cent.

While all of these reports are from small villages in Russia, they seem to be authentic, and are accepted as such, consequently it would seem evident that the streptococcus vaccines, or bacterins, have some influence and are of considerable use in the control of epidemics of scarlet fever. Rosenau says. "Their use, with proper care, is attended with no harmful results, and deserve a wider trial in this country." No one has as yet proven the Russian reports to the contrary, and until such happens, it is my belief that we should give such findings the benefit of the doubt and apply the vaccines.

Gabritschewsky used a concentrated bouillon culture of the streptococcus isolated from a person ill with scarlet fever. Of this vaccine 0.5 cc. is given as the dose for a child from 2 to 10 years old, with 0.25 cc. for younger children and 1.0 cc. for adults, as the initial dose. Three doses are given at intervals of 7 to 10 days, the dosage increasing each time, 1 1-2 to 2 times the previous dose.

Rosenau mentions the conditions in which the vaccine should not be given, as: (1) in those having a high temperature, although even these have received the prophylactic without evident untoward results; (2) in very young infants or patients who, from some cause or other, are greatly exhausted; (3) in those having nephritis.

Stock bacterins, made from bacteria taken from scarlet fever cases, and polyvalent through having been received from more than one person, are said to be as effective as those mentioned by Gabritschewsky, which were in reality of like character, as they were not autogenous. Of the stock bacterins the doses are as follows: 1st, 250,000,000; 2d, 500,000,000; 3d, 1,000,000,000, and the suggested interval between doses is seven days.

Immunity is established completely after the third injection, and has been reported in some instances after the second. Full immunity seems to be established from 5 to 7 days after the last inoculation. While the time has been too short to make any absolute estimate as to length of immunity, it is said to be at least 1 1-2 years, although it may be for a longer period.

Having accepted the typhoid prophylactic and seen the results accruing therefrom, it seems only rational in my mind that we should vaccinate against scarlet fever. If we can wipe out the latter as effectually as the former, such should be our effort.

138 North Center Street.

A CENSUS ENUMERATION OF CRIPPLED CHILDREN IN AN URBAN DISTRICT

BY DOUGLAS C. McMURTRIE
Editor American Journal of Care for Cripples

There has been much speculation regarding the number of crippled children in the United States, and many people engaged in their care have desired statistics on the subject. Cripples are not included among the special classes enumerated by the national census, and, in view of the difficulties encountered in the census of the blind, it is hardly likely they will be.

An extensive census of crippled children was taken in Germany some years ago and later there was an enumeration on a smaller scale of the cripples in Birmingham, England. Up till recently there were attempted in this country no first hand studies along a similar line. If national, state or municipal enumerations of cripples cannot be made, deductions of value may be drawn from data collected for limited districts. In order to make a beginning along this line, the Association for the Aid of Crippled Children has recently made a census of all the children, crippled or otherwise, in the Yorkville District of New York City. The results are of great interest, particularly as they relate to the percentage of children not receiving medical or surgical treatment.

This intensive work, which began in February, 1914, was localized in a middle-class tenement section of the East Side, midway between the downtown and uptown slums. The district studied comprises 154 city blocks, of which 117 were visited, the remainder being private houses, public or commercial buildings, or vacant lots and parks.

The summarized results may be expressed as follows:

Total houses visited in 117 blocks	3,323
Total families residing in these blocks	37,415
Total well and crippled children found in these families	38,550
Total crippled children in above number	208
Total children otherwise handicapped	172

Average number of houses to a block	28.4
Average number of families residing in each block	319.7
Average number of well and crippled children residing each block	329.4

The children both well and crippled, were divided as to nationality as follows:

	Total well and crippled children	Total number of cripples	Rate cripples per 1,000
American (other than Hebrew or Negro)	5,808	44	7.5
Italian	3,761	22	5.8
Austro-Hungarian	8,013	38	4.7
Hebrew	5,688	45	7.9
Irish	5,855	20	3.4
German	5,799	15	2.5
Negro	201	4	*
Others	3,425	14	4.0
Information Unknown	....	6	
Totals	38,550	208	5.3

The table shows that the American and Hebrew children recruit the greatest number of cases of orthopedic defect, the rate being well over 7 per thousand. Next in order are the Italians, with a rate of 5.8 per thousand. The Austro-Hungarians, mostly of Bohemian extraction, follow with a rate of 4 per thousand: the Irish next with a rate of 3.4; and the Germans lowest of all with a rate of 2.5 per thousand.

The specific defects were divided in the following percentages:

Paralysis	50.0
Heart cases	12.5
Tuberculosis	8.7
Pott's disease	5.3
Foot deformities	3.8
Spinal deformities	3.8
Bow-legs	3.4

But the most interesting data of all concerned the number which had received previous treatment, since upon this construction work may be based:

	Number	Per Cent
Cases receiving previous treatment	136	67.3
Cases not receiving previous treatment	66	32.7

*Percentage unreliable owing to small total.

It seems desirable that intensive work of a similar character should be done in other localities.

PREVENTION OF CONCEPTION

The Critic & Guide reproaches medical journals with timidity in discussing this issue. The Medical Summary explains that the "outside of the pen looks good to most of us." It is a matter of common knowledge, law as well as medical, that prevention is quite generally practiced. Vital statistics alone show that it is, on the whole, efficiently and safely practiced. All physicians occasionally note instances in which it is practiced both inefficiently and dangerously, and know that its inefficient use is often followed by more or less efficient and more or less dangerous attempts at abortion. Sociologists are taking up the matter from the economic side and many favor it not only as a matter of direct economics but as a eugenic factor in the sense that fewer children are better reared. There are cases in which the prevention of conception is professionally recognized as almost or quite life saving—excluding the obvious and often impractical alternative. There are many more cases in which its temporary use is professionally regarded as favorable to the economics and health of the family and thus ultimately of the community. We feel that the time is ripe for an abandonment of the policy of sticking our heads in the sand to blind ourselves to facts. Even the ostrich does not do this. He gets a good look and then braces himself to kick. We believe that when a method, however objectionable ethically is in common use, it should be freed, so far as possible from danger and that, if used at all, it should be used intelligently. The law should recognize actual conditions, rather than theories. We speak thus, not from immorality but from a realization of the terrible catastrophies that attend blind ignorance and legendary, half understood, dilutions of fact. But all sides of the question should be thoroughly discussed before propaganda for repeal of existing laws are in order; they should be discussed much more thoroughly still before propaganda for a professional and lay campaign are instituted. The medical practitioner and the medical editor must await the verdict of the legislator, the legislator must express the well digested opinion of the economist and sociologist. The latter must consider well the opinion of those qualified to voice ethical, moral and religious opinion.—Buffalo Med. Jour.

SOCIETY TRANSACTIONS

AMERICAN PEDIATRIC SOCIETY

Twenty-seventh Annual Meeting

Lakewood, N. J., May 24-26, 1915.

President's Address.—Dr. George N. Acker, Washington, D. C.: The members of this Society are in a position to work out problems concerning improvement in the condition of children upon a large scale, and to test out quickly the correctness of given theories. The milk question was solved in this way, and in the same manner we can arrive at the solution of other important problems confronting us at the present time. A dogmatic spirit should have no place in this work. There must be scientific investigation, and a willingness to forsake conclusions proved to be incorrect. It is our duty to see that our knowledge concerning infant feeding is so systematized that there shall not be in the future the confusion that there has been in the past in regard to this subject.

Cubic Air-Space for Institutional Bottle-Fed Infants.—Sr. Thomas S. Southworth, New York City: The majority of hospital and institutional wards for infants provide one thousand cubic feet and upwards of air-space for each infant, and only a few report six hundred or less. Ventilation is deemed as important as air space. No allowance of air-space is made for the attendants. Separation of the beds plays as large a role in limiting the spread of infections as does air-space. Bottle-fed babies require more air than nursing babies, and as much as so-called sick medical or surgical cases. Infants, especially bottle-fed infants, should have as much air-space as adults or more. Bottle-fed infants, when retained for a considerable length of time in institutions, cannot be considered as well. Limited air-space, involving limited floor space, is an important contributing factor in the mortality of artificially fed infants. Free ventilation is also of great importance to the well-being of infants. The mere presence of windows does not constitute ventilation. A low minimum of cubic air-space established by law, with deficient ventilation and without enforcement is more harmful than beneficial, constituting a license for overcrowding. The example of the more progressive institutions is nullified by State and local regulations licensing those with a minimum air-space, in which there is a high mortality.

DISCUSSION

Dr. L. E Holt: I think that Dr. Southworth has done a great service in stimulating the interest of the Society in the principle of accurate statistics on this subject, which may serve to change the views of the members regarding it, and may be for the benefit of hospital authorities generally. I think that the greatest misapprehension exists among hospital trustees, managers and superintendents concerning the special requirements for infants in hospitals. The question has been debated in New York for the last two years, whether the requirements for children and infants are best secured in separate institutions or in branches of large, general hospitals. I do not know that it has yet been decided. I have thought that infants and young children are better cared for in separate institutions, because of the difficulty in obtaining the proper administration, proper nursing, proper general care and special instruction needed for infants or young children when placed in large institutions. Nevertheless, there is a great advantage in a children's ward attached to a large hospital furnished with a training school for nurses and possessing the proper modern appliances and a good corps of instructors. Then, again, if this is the case, the interne serving in the general hospital acquire an experience in the treatment of children's diseases. A much larger number obtain experience in treating children than would be the case if the service in children's wards were confined only to special hospitals. The question is whether the advantages on one side are overbalanced by those on the other. I should like to hear some discussion on the question whether, on the whole, we should prefer large hospitals especially for children, particularly young children, or should recommend to hospital boards or city authorities that the children should be cared for in large institutions of a general nature, and merely in a special ward. It is very hard to get the special requirements for infants carried out, and to get the superintendents to see that children need twice as many nurses as adults. That is almost as important for the welfare of the children as the other questions.

Dr. R. G. Freeman: In regard to the matter of cubic air-space. it seems to me that what the children need is not so much air-space as freely moving air. You cannot get that in a closed ward, no matter what the air space may be. The children must be where the air is moving from open windows. If kept out of doors, they are better off than in any ward.

Dr. Holt's question as to the comparative advantages of wards in general hospitals and special children's hospitals interested me very much. I did work for many years in children's hospitals, and have recently worked in a general hospital. The disadvantage in our institution is that they have grown up from nursing or foundling institutions, and are now equipped for good work in feeding. On the other hand, Dr. Holt's institution started as a babies' hospital. Our other large institutions, however, have come from the other side and cannot give the advantages in studying cases that you can get in a general hospital. In the latter, you can get better facilities for doing good work and the contact with men in other departments enables the pediatrist to get ideas for the treatment of children from learning the latest methods of treatment used for adults.

Dr. L. E. LaFetra: Regarding the cubic air-space, it seems to me that many other factors besides that have to do with the thriving or lack of progress of artificially fed babies. At Bellevue, we have satisfactory air-space in our ward for babies. In the small ward, when it is full, we have one thousand cubic feet per baby; and when less crowded, as much as 1700 cubic feet per baby. In the large ward. which contains 42,000 cubic feet. and accommodates 27 babies, this gives 1,500 cubic feet per baby. In both these wards, it has been found that the babies do better the smaller number of them there are. This brings up the question of why it is, aside from the food. that artificially-fed babies do less well than breast fed. It seems to me that the answer is in the statement that the fewer the babies, the better they do; because then better attention is given to each baby. If fifty babies are in the ward, there is not another nurse or two added. The infants then get less individual care. The mothering. the carrying about, that the artificially fed baby gets is very little. The head nurse says that the more the nurses can carry the babies about and give them the same sort of treatment they would get if they were breast fed babies, the better they will thrive. The nurses are very good about doing this when there are only a few babies to attend to, picking them up out of their beds, taking them away from the damp places in which they have been lying, and turning them about; but when there are a great number that cannot be done.

The matter of providing balconies, sun-parlors, freely flowing air, etc., has been insisted on, so I shall not speak of it. I should like, however, to refer to another matter, and that is the question of adequate nursing in children's wards at night. That is a factor of great importance. It has been emphasized before, but cannot be reiterated too frequently. The space between the beds is also, I think, very important, especially in the winter, when the chances of carrying respiratory infections from one bed to another, if the beds are within striking distance, are very obvious.

Dr S McC. Hamil: Answering the question asked by Dr. Holt, I would say that it seems to me that the answer depends very much on what the hospital managers are willing to give in th eway of accommodations in general hospitals. There is no question that, as the general hospital wards for children are constituted at the present date, the seperate institution is a much more valuable method of caring for children. On the other hand, if hospital managers could be induced to create the proper conditions, it seems to me that children could be as well cared for in general hospitals as in children's hospitals, and that such an arrangement would contribute much to the reduction of the cost of administration.

As it is now, I know of no general hospital that has a sufficient number of wards to take care of all classes of children. The infants are sometimes separated from the older children, but the institution is unknown to me in which surgical cases and the various general conditions and medical cases in infants are all separated from one another. If such conditions could be created in the general hospital, it might be possible to care for the children satisfactorily in a general institution.

Now the most admirable way to care for young children is the way in which it is done in Johns Hopkins Hospital, where they have the children's hospital practically connected with the general hospital, and the children's institution is administered as a part of the general hospital. They have also the advantage of having the medical cases separated from the others, and the infants from the older children. It is not an absolute necessity that children's institutions should be separated from the general institutions. The question resolves itself into one of the cost of administration. So far as the point mentioned by Dr. Freeman is concerned, I do not believe that young children suffer from the lack of having sufficient opportunity for proper treatment owing to the inability of their physicians to consult with the representatives of other departments.

Dr. H. L. Coit: I was much interested in this paper. The question that I was most interested in was the one with reference to the belief that an infant artificially fed needs as much cubic air-space as an adult does. There must be a reason for that. I do not know what the reason was in the mind of the man who expressed that opinion; but as it appealed to me, I think it must be due to the fact that the artificially-fed infants, often with an insufficient temperature, from a state of atrophy, are radiating heat from their bodies more freely than the normal infant, so that it is more necessary in their cases to be careful about ventilation. I do not believe that Dr. Southworth mentioned, in his paper, this point; because I did not hear it

With reference to the hospital, it seems to me that where infants most of whom are in a state of atrophy, with no capacity for generating heat, and are radiating heat from their bodies, are concerned, it is necessary to keep the surrounding air warmer than in other cases. That means more care with reference to the inflow and outflow of air in ventilation. Many infants' hospitals are poorly equipped, in this respect; and I do not know that any system of ventilation can be regarded as perfect in this particular. Indeed, it has been claimed recently that no system of ventilation can be depended on. In my hospital, we have had to put cheese-cloth in the windows and leave the windows open; but this cannot be done with these atrophic infants, and we have to keep the windows closed. Something should be done along the line of getting a balance between the ventilation and air-space. I have tried to provide one thousand cubic feet for each infant, and also to follow what I learned as a young man, to allow the air to pass in and out at the rate of two cubic feet a second, which corresponds to an opening six inches in diameter.

Dr. F. B Talbot: There is no question that the babies with subnormal temperature need a higher surrounding temperature than do those with a normal bodily temperature. They need it to keep warm; but in comparing the case of the normal infant with that of the infant with a subnormal temperature, we find that the latter is apparently not due entirely to the fact that it loses heat by radiation from the skin, but to the fact that the human engine is not burning enough fuel to keep the baby's temperature up. For that reason, the temperature has to be elevated from the outside; just as it would have to be if the radiation were greater.

Dr S. S. Adams: The great advantage in the construction of hospitals depends on the money raised and the architect selected. An architect who does not know anything about the construction of hospitals and will not take any advice from men of experience, you may expect to build a hospital in which there are no lights on the stairway when the children have to be taken up and down at night.

Another point is this: If you have a Ladies' Board connected with the hospital, and the men do not consider your complaints, call the ladies together and tell them. They are the ones who raise the money; and if you tell them that the hospital is not properly constructed, they will see that you get what you want. I had such an experience some years ago. The men connected with the hospital turned me down; but when the Board composed of men did that, I got the Ladies Board together and talked to them, finally winding up by telling them that there was no place fit for babies in Washington but the poorhouse, and I got the ward in a short time.

If the man in charge is practicing general medicine, it is doubtful how many concessions you will get. He does not want you to have the work. He wants the work done in his general wards, and the money expended on that service. In the reorganization of the Georgetown University, I became the head of the Department of Medicine. I assign the men to their positions and tell them what I want done in the children's ward. When this ward was built, I told them that we wanted it large enough in air-space for the children to live in.

In regard to the exercise of sick babies in the hospital, it has to me always seemed a sad thing to give a young girl eight to twelve babies to take care of, and expect her to do it. If there are, say, ten babies, by the time she gets through with the tenth baby, the first is ready to be attended to again, and there is no time to give them exercise. I have adopted, in both the hospitals with which I am affiliated, a plan that I have found very good. I have the mothers of the infants come to the hospital and take their babies out in the air for a while each afternoon. This is much better than having the mothers sitting in the wards and watching, with a critical eye, everything that occurs; and then complaining of it. It gets rid of the mothers and relieves the nurse of the care of so many babies. In this way, also, you can give the babies exercise.

Some years ago, at the Washington Foundling Hospital, I had the Board employ women for the special purpose of coming to take the babies out and assist the trained nurses; and we found that the babies did much better when they were taken out in carriages or carried in the arms. Even the weaklings do better, if you can give them some amount of exercise, as Dr. LaFetra suggested.

If the men in charge of hospitals would insist that the child should have an equal chance with or greater chance than the adult for getting fresh air and exercise, there would be some impression made on the rate of infant mortality. If the men will not listen to you and there is a Ladies' Board, appeal to them and you will get what you want.

Dr. Southworth, closing: Dr. Freeman is right in thinking that it is not so much a question of cubic air-space as it is of freely moving air and other things, but, nevertheless, it is important to provide for a sufficient cubic air-space, because that is the only way in which you can get at a regulation to prevent overcrowding. That is the way in which Wolff's laws are framed. There are many things besides the air-space that enter into the problem, but you must have an abundance of air-space, or you will have overcrowding in the wards.

A great many of the answers that came to the inquiry indicated that the men thought that the windows should be thrown open, winter and summer, or, at least, that they tried to have this done, in the case of the marasmic infants of which

Dr. Coit spoke; but I do not quite see how, with a limited cubic air-space, you would be able, in a good deal of the winter weather that we have in the East, especially around New York, to keep the windows open, and also keep the smaller, marasmic babies warm enough.

There is a constantly growing belief that infants ought not to be put in so-called foundling institutions, but should be boarded out. It is rather interesting, however, to note that the strongest agitation for that is in New York State, and has been in California, as Dr. Porter will testify, for these are the States that have allowed, in the past, the smallest cubic air-space in institutions. The deduction is obvious, that with the smaller air-space allowed by these States, the results have been so bad that the agitation has grown for the boarding out of babies. There probably would not have been so much clamor for this if the institutions had a larger air-space.

Parapharyngeal Abscess as Distinguished from Peritonsilar and Retropharyngeal Abscesses.—Dr. Henry Heiman, New York City: There occurs, especially in children, a form of abscess occasionally mistaken for retropharyngeal abscess, which is really a parapharyngeal abscess, as its site is in the lateral column. It originates in the superior chain of the deep cervical glands, as distinguished from the retropharyngeal glands. These abscesses, as a rule, are cured only by external operation.

DISCUSSION

Dr. Wilder Tileston: Last fall, I saw a case of parapharyngeal abscess, which presented in the pharynx at the region of the lateral band on one side. In this case, contrary to what Dr. Heiman's paper states, the abscess perforated internally, and was cured without external incision.

Dr. Southworth: I think that it will require a little closer reading of the paper, when published in the Transactions so as to get a better understanding than I could obtain by following the description of the cases when read. It is not clear to me how we are going to distinguish between a peritonsilar and a parapharyngeal abscess. I think that—at any rate, in practice—the two are likely to be confused; although, as I understand Dr. Heiman to have said, there is more swelling of the tonsil in the peritonsilar abscess. The external gland swelling that is noticeable in these two groups of cases, which are rather border line cases, where they are outside of the tonsil, is interesting. I think that there is a peculiar feeling about the swelling that you get with these peritonsilar abscesses, which is different from that of anything else. It is a vague swelling, without any particular outline, such as you get when you can feel the glands; and it always suggests the presence of an abscess in the throat. Where you find it, you are liable to say that the tonsilar tissues are pushed over towards the median line.

The cases that might be grouped under one of these two heads, peritonsilar and parapharyngeal, have, in my experience, sometimes been openable inside, and sometimes outside. In one case in which we had to open the abscess outside, it was possible to pass the probe in and feel it behind the mucous membrane of the pharynx. In one that I saw last fall, which contained probably an ounce of pus, the original incision not having produced very much pus, the opening was finally made inside; and there was nothing in the way of pointing on the outside. I should like to have Dr. Heiman state, in closing, whether these cases point externally; or whether, in his recommendation for external opening, he meant that you have to go down after the mby means of a surgical operation, as you sometimes have to do with th ecellulitis cases following scarlet fever.

Dr. Porter: I should like to ask Dr. Heiman how he differentiates between a superior cervical adenitis and the condition that he described.

Dr. LaFetra: I should like to add my testimony to the fact that many of these swellings that occur in the pharynx, on the side, and below the site where the peritonsilar abscesses appear, can certainly be opened from within. Whether Dr. Heiman would include such swellings as I have seen in the class of parapharyngeal abscesses or not, I do not know; but if his statement is that the abscesses must be opened from without, there must be another class—because I agree with Dr. Tileston and Dr. Southworth that many can be opened from within. I have seen many that are not peritonsilar abscesses in the ordinary sense, accompanied by a large swelling on the outside that can be opened from within.

The second point that I wish to speak of is that, notwithstanding the enormous amount of swelling in the glands of the neck and the pushing over of the tonsil towards the median line, one should not be in a hurry to open these abscesses, because they will frequently subside, if time is given them, and treated by means of hot irrigations.

Dr. W. L. Carr: I think that the classification is rather indefinite. A certain number of children may have an infectious process going on in the hip and superficial lymphnodes of the area, and the classification will depend on whether there is a broken-down node in one or the other group. It is not always possible to tell whether you have a condition of that kind or not. At a medical society meeting in New York during which the subject was discussed by pediatrists and surgeons, the surgeons favored opening externally, and scorned any other mode of procedure; while many of the medical men thought that they could reach the cases by means of an internal incision and other methods of treatment, such as irrigations, etc. I do not think that it is easy to describe, in a case of this kind, whether it is going to be a suitable one for the general surgeon or one that can be managed by a small incision. The two classes of cases certainly overlap, and the lymph node involvement, just as in that which occurs in scarlet fever, may be very extensive, with every indication of cellular trouble, and yet wholly disappear with toilet of the nose and throat. The classification is hard to make out, although we would argue that the operation to be done is the one that gives the best drainage—whether internal or external, or whatever the form of infection.

Dr. J. P. Crozier Griffith: I should like to ask the members, for the gratification of my own curiosity, whether their experience has been the same as mine with regard to these abscesses. Dr. Heiman spoke about the diagnosis of retropharyngeal abscess as being easy; but my experience has been that the profession at large are about the last to think of this possibility. It is like scurvy in this respect. As soon as you think of it, that is what it is; but my experience has been that the cases of retropharyngeal abscess that I have seen have been those in which this condition was not thought of. A man older than I am, and having a large experience in general practice, called me in to see a case of this kind, and told me that he had never seen such a thing before; and, a few days ago, I saw another case in which the surgeon said that the abscess was the largest that he had ever seen. It had recently been treated by someone who had never dreamed of what was going on in the child's throat.

I should like to speak of some of my early experiences, when I was a young man, which I always remember. I had recently become visiting physician to a hospital and had made a diagnosis of abscess in the pharynx. I wanted the surgeon to operate, but the thought the trouble was not due to the presence of pus. The surgeon said, "Dr. Griffith thinks that there is an abscess here; and while I do not think so, I am willing to make an incision." He did so, and Dr. Groffith had great joy in seeing the pus spurt out of the child's mouth.

Dr. Heiman, closing: In answer to Dr. Tileston, who asked whether it was possible that he had seen a case of rupture spontaneously, I wish to say that I mentioned, in the first case that I reported, that this case ruptured spontaneously. That is very possible. When we consider that we are dealing with the superior chain of the deep cervical glands, we can see that if the superior ones become infected and point towards the pharynx, pushing the tonsil inward, when these are inside and internal, the patient may recover without any further operation If you look at the plate, you will find that this is possible In my conclusions, I said that these abscesses are, as a rule cured only by external operation. That does not signify that every case requires a radical operation.

In answer to Dr. Southworth's question regarding the differential diagnosis between a peritonsilar abscess and a parapharyngeal, I would say that in my paper I said that a peritonsilar abscess, as a rule, follows a tonsilitis; and that the symptoms, as a rule, are sudden in onset. The condition develops rapidly, within two or three days; whereas, it requires weeks for them to develop in the true parapharyngeal abscess The only way in which we can tell that anything is wrong is by observing that the temperature remains high and septic in type. Then we suspect the cause of the trouble, and look at the tonsil closely, and we find it pushed inward, without any apparent local redness. Whereas, anyone seeing the peritonsilar abscess will, within twenty-four to forty-eight hours, be able to make a diagnosis of it. It, also, pushes forward the pillars of the fauces and infects Rosenmuller's organ.

Dr. Porter asked how to make the differential diagnosis between a superior cervical adenitis and parapharyngeal abscess I also stated that the superficial glands are infected in infectious diseases; but these abscesses point entirely outward, and the tonsil is not pushed inward, towards the median line.

Dr. LaFetra expressed his belief that cases can be opened from the inside. I fully agree with him that if the superior chain is involved, these abscesses may drain nicely from above downward.

Dr. Carr said that the localization of the abscess will depend on whether there is a broken down node in the deep or the superficial chain, and that one cannot always tell whether the case is one for the surgeon. You can tell by seeing whether the patient improves with the ordinary mode of treatment or not.

Dr. Griffith says that it is difficult to diagnose retrrpharyngeal abscess. It is difficult for me, also; but when we think of a condition, we diagnose it much better. When I first heard of amaurotic family idiocy, the case presented was supposed to be only the seventeenth case on record. This was in 1897, but within a year's time, there must have been two dozen (or two thousand) on record. If you begin to think of and look for these abscesses, every time there is trouble in the throat of a child, I believe that we shall be able to diagnose thm more frequently.

CRETINISM AND HYPOTHYROIDISM

In typical cases of cretinism, the characteristic symptom, myxedematous infiltration of the tissues, seldom appears before the first year, especially in breast-fed infants, owing to the fact that, as previously stated, the infant receives, through the maternal milk, sufficient thyroid secretion to compensate for the deficiency due to degeneration or lack of development of its own gland. The earlier signs in the infant are in the main deficient development, mental and physical, with, in most instances an unusual thickness of the neck, which is rendered irregular, frequently by swellings or pads due to localized myxedematous infilarations. These frequently involve the supraclavicular spaces and extend sometimes to the axillæ. Gradually the whole body becomes obese, the abdomen particularly. The lips are thickened and kept apart by an enlarged infiltrated tongue which protrudes more or less, a condition which is accompanied by an almost constant flow of saliva. The lids and circumorbital tissues being also infiltrated, the eyes appear small and half closed.—Sajous.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Orthopedic Surgery

Under the Charge of

JAMES K. YOUNG, M. D.

Associate Professor of Orthopedic Surgery, University of Penna.; Professor of Orthopedic Surgery Polyclinic Hospital; Clinical Professor of Orthopedic Surgery, Women's Medical College.

and

A. BRUCE GILL, M. D.

Dispensary Surgeon to the Presbyterian Hospital; Assistant Surgeon to Widener Memorial School.

A Consideration of the Relative Merits of the Albee Operation and the Hibbs Operation.—By Ethan H. Smith, Cal. State Journal of Medicine, May, 1915.

The Albee operation should not be performed upon children under five years of age because the bone transplant in a child of that age is too flexible. It will bend and the deformity will increase. The Hibbs operation is applicable in these cases because a large amount of callus is thrown out. The older the patient, the more suitable is the Albee operation; while, on the other hand, the Hibbs operation should probably not be performed on a patient more than fifteen years of age, because insufficient callus is thrown out. Furthermore, in adult life the bone transplant will give much better support.

. . The Albee transplant is to be preferred to the Hibbs operation where there is lateral lowering due to necrosis of the sides of the bodies of the vertebrae. The transplant should be placed on the concave side of the deformity after the penosteum has been stupped from both spinous processes and laminae. The splint is placed in the angle between the spinous processes and the laminae, and the sutures should be passed through the bases of the former.

A transplant on each side of the spinous processes is undesirable and harmful.

The bone transplant should be shaped with the saw as it is removed from the tibra, so that it may fit accurately the bed prepared for it.

The author thinks Albee is right in not using a plaster jacket after the operation. The patient should be placed in a prone position until the wound is healed. After the Hibbs operation support is necessary.

Cases with sinuses should not be operated upon until the sinuses have healed. Weak and anemic cases should be deferred until their condition has improved. Patients with cervical disease should not be operated upon by either method.

Cervical Ribs.—By A. E. Baker, The Charlotte Medical Journal, May, 1915.

The subject of cervical ribs has received considerable attention in recent years.

In 75 per cent of cases they are bilateral, and they usually arise from the seventh vertebra. Gruber makes a classification of four groups: slight projection not beyond the transverse process, projection into the muscle, well developed rib reaching to the first rib, the rib which articulates with the first costal cartilage with the sternum.

Cervical ribs project into the region of such important structures as the brachial plexus, the subclavian artery and the vein, and the pleura, and produce symptoms as they cause pressure upon them. Symptoms do not usually arise until adolescent or adult life, and many cases estimated at 90 per cent) present no symptoms at any time. Removal of ribs which cause symptoms should be done through a posterior incision to avoid injury to the brachial plexus and the pleura and the vessels.

The author reports a case in which he performed bilateral operation.

Referred Pain in Flatfoot.—By Max Strumsky, Journal A. M. A., July 3, 1915.

It is known that referred pains may appear in remote portions of the body due to flat-foot, and that there may be arch strain even when there is no apparent flattening of the arch. Such pains will be relieved when the arch is properly supported.

The author cites two cases of pain in the back for which no cause could be found. Both were immediately relieved by arch supports.

These remote referred pains are probably not referred along the nerves but are due to disturbance of the muscle balance of the body. The anterior and the posterior groups of muscles of the extremities and the spine preserve the erect posture of the body. When normal posture is altered by disturbance in the position of the feet and their arches, more than normal strain is thrown upon one or the other of these muscle groups.

Tuberculosis of the Knee-Joint in Childhood. By Sever and Fiske. American Journal of Orthopedic Surgery, April, 1915.

Tuberculosis of the knee-joint in children occurs next in frequency to tuberculosis of the spine and the hip-joint.

The authors have made a study of 638 cases occurring in the Children's Hospital of Boston during a period of thirty years. They found that in this series of cases males predominate. Right and left knee are equally affected. Trauma occurred in but 30 per cent of the cases, tuberculosis family history in only 13.5 per cent, and involvement of other joints in 11.3 per cent.

Osteol involvement predominates in children although synovial disease frequently accompanies it. Abscess occurred in 27 per cent of cases.

The average duration of treatment was 4.9 years. Those not operated upon averaged 4.2 years; those operated upon, 5.8 years. The result was satisfactory in 65 per cent of the cases. The best results in the non-operative cases were obtained by the combined use of plaster and splints. The bad cases on admission compare unfavorably with the general average. Abscess cases not operated upon gave far better results than those which were opened.

Shortening of the Healing Time of Bone Necrosis After Operation.—Carl Bayer (Jahrbuch f. Kinderheil., Dec., 1914) says that the slow healing of large cavities after operations for osteomyelitis, diseases of the bone medulla, or removal of sequestra, and also the poor results obtained and the dangers to which the patient is exposed have caused surgeons to seek for some means of hastening repair. It has been attempted to draw together the remaining tissues and fasten them with small nails or sutures so as to make the aperture as small as possible. This saves time for the patient and the surgeon; but in some cases there is so large a cavity and of so irregular a contour that poor results are obtained. Bier and others attempted osteoplasty to fill up these cavities. The cavity left by the sequestrum was cleansed and dried. Straight incisions were made through the soft portions at the ends of the operative site so as to make the scar as nearly linear as possible. The skin, periosteum and bits of bone left are drawn together so as to fill the cavity. But there are still septic portions left in these cavities and these remain a source of danger to the patient. After necrosis this method has little value. The author places his dressing under an Esmarch bandage so as to get as dry a wound as possible. He found that the insertion of portions of the skin and periosteum is the best and cleanest method of closure. There are cases in which the whole diaphysis has become necrotic and is a sequestrum. All this mass must be carefully removed. Granulations must be scraped away with a sharp spoon. Often a central abscess of the canal is opened. The whole canal is irrigated with one per cent sublimate solution, then with sterile water. The whole canal is made as smooth as possible but with care not to thin the bony walls too much. It is astonishing how quickly the periosteum builds new bone. The deep cavity is reduced to a flat hole covered with overlapping flaps of periosteum. In this over the remaining skin is laid a small, long roll of iodoform gauze, which is sutured in place, making pressure down into the cavity, and is retained by wadding and carefully placed bandages. After removing the Esmarch bandage the limb is elevated. The bleeding is not great. The first dressing is left in place from fourteen to fifteen days. The grafts are found adherent to the bone and the wound reduced to small compass. The author gives histories of eight cases treated in this manner with success: healing was complete. The shortening of the time of healing is marked.

Miscellaneous Abstracts

Influence of Feeding and of Illness on the Growth of the Brain in the First Year of Life.—Wolf Sawidowitsch (Monatsschr. f. Kinderheil., Bd. xiii, Amer. Jour. Dis. W. and Child.) says that there are two methods of studying the growth of the brain: first, by weighing and measuring the brains of children postmortem; second, by following the growth of the skull and brain in the living child. By the last method we find the results of growth as influenced by the kind of food used, by the use of a single food, or by the failure of nutrition due to gastro-intestinal troubles. We also learn within what bounds repair of stunting is possible during the first year. Since the growth of the brain is parallel with that of the skull the author measured the skulls of 125 children from three weeks to seventeen months of age. He gives as his conclusions: that in a normal, healthy, well-developed child under either natural or artificial feeding, we may observe the same curve of skull development or an interference with skull growth. A diet lacking in fat, such as a carbohydrate diet causes a disturbance of the general growth of the skull and brain, coincident with a general failure of nutrition and growth. Such brains are found to have less than the normal development and growth. Children fed on full milk diet or condensed milk have large heads. All disturbance of nutrition, due to either failure of feeding or disease, cause failure of growth. In some cases of the exudative diathesis there is no failure of brain growth. In rickets no influence of the disease on brain growth is noted. The head appears larger than normal through an improper proportion of the length and breadth of the skull. The height is too small in proportion to the great length and breadth of the skull. The brain contents are not affected, but the small stature of rachitic children is out of proportion to the size of the skull. With growth and increase in weight goes increase in the growth of the brain. With disturbed nutrition during the first months of life, lasting for some time, the brain recovers its growth during the first year. If the trouble lasts too long the lack of normal growth in the first year is not repaired.

Breast Feeding.—I was much interested in Dr. H. K. Waller's article on breast feeding in your issue of July 17th, and I quite agree with him that larger meals are obtained when the interval between the feeds is lengthened. I have often demonstrated this fact with the help of test meals. We also know that infants living under good conditions get larger meals than those living in the slums; but when Dr. Waller asserts that "it is quite easy for any woman to find out how often her child requires feeding" I must disagree with him. I have seen so many cases in which the irregularity of the feeding times, quite apart from too frequent feeding, was the sole cause of wasting in breast-fed infants, that I feel his assertion cannot pass unchalenged.

Only the other day I saw the case of a breast-fed infant two months' old not satisfied and suffering from vomiting and wasting. The muscles were very flabby and the bowels constipated. The mother fed it sometimes every two hours and sometimes every four hours, according as to whether she thought the child was hungry or not; if it was asleep in the daytime she did not wake it. She had been advised to give up breast feeding, but in order to avoid expense she came to the Infant Consultations. The "test feed" showed that the child obtained 2 1-2 oz. from the breast; this is a fair average feed for a slum infant, so I told the mother she must feed her infant every three hours by the clock and wake the child up in the daytime for its meals. I wrote down the times for feeding and the mother promised to follow the directions. In a week's time there was great improvement, and in a fortnight's time all vomiting had stopped, the weight had increased 15 oz., the muscles were firmer, and the bowels regular. The child continued to make excellent progress, and single test feeds showed a gradual increase up to 6 oz. I only quote this case as an example of hundreds of others in which clock-like regularity in feeding has saved the child from being deprived of its mother's milk.—Ronald Carter, M.D., in London Lancet.

Phlyctenular Ophthalmia.—S. Theobald (Jour. A. M. A., 1914, lxiii, 566) states that the evidence adduced in support of the doctrine that phlyctenular ophthalmia is a tuberculous or pseudotuberculous lesion is far from convincing. The frequency with which the subjects of phlyctenulosis give a positive reaction to diagnostic tuberculin tests is of little significance in view of the fact that the same tests, show a scarcely smaller percentage of positive reactions in healthy persons. There is excellent authority for the contention that "until some responsible observer has demonstrated the presence of the tubercle bacillus in an extended series of phlyctenules," or, at least, until it has been shown to be sometimes present, the assertion that the affection is, in any sense, tuberculous is without warrant. In the present state of our knowledge of the etiology of phlyctenulosis, the employment of tuberculin as a therapeutic agent in this affection is unjustifiable, not only because the ill-considered use of tuberculin is capable of doing much harm, but also because the clinical evidence shows pretty clearly that, if it is not actually harmful, it surely is not helpful. Definite clinical signs of the existence of tuberculosis, apart from the ocular inflammation, may justify the administration of tuberculin, but even in such circumstances the effect on the eye could be only indirect. As phlyctenulosis is essentially a disease of childhood, and the typical cases occur not in adult life, but in children, it is from the study of these cases that trustworthy conclusions as to the etiology of the effection are to be drawn.

Elephantiasis in a Boy Aged Eleven Years—By S. De Los Terrores. At the age of eight years this patient had a phimosis with preputial excrescences accompanied by anasarca. Circumcision relieved him completely and he was quite well for three years when he developed lymphatic varices in the inguinal regions and genitalia. In a few months he developed a typical elephantiasis of the entire left lower extremity, external genitals and a semilunar zone in the lower abdomen, with slight involvement of the right foot. No filariae were found in the blood. It was possible to exclude the other common causes of the condition as syphilis, leprosy, paludism, bacterial infection with streptococcus and lymphococcus. Medical treatment is unsatisfactory. The surgical measures ordinarily used are deep scarification, compression or ligature of the main artery of the limb, removal of inguinal glands, partial excision of the affected skin and finally amputation. The case reported did well under electrical vibration treatment with the internal administration of protiodide up to the toleration point, later followed by two c.c. of thiosinamine injected every second day.

Cerebellar Abscess Not Due To Ear Trouble.—By Hugh T. Ashby. The patient, a girl aged four years, complained of headaches for five weeks. On admission she appeared listless and it was noticed that she always rested on the right side. There was a slight bronchitis present and the pulse was slow and irregular. Kernig's sign was absent, but the tache cerebrale was well marked. Examination of the cerebrospinal fluid showed it to be clear with a slight excess of lymphocytes and polymorphonuclear cells. After a few days vomiting commenced, and during the last four weeks of her life she vomited two or three times daily. Constipation became marked. The pupils reacted slightly to light and were equal, but the eyes showed a gradually increasing optic neuritis. The temperature remained normal throughout the illness. Five weeks after admission, after a convulsion which affected the right side for the greater part, she died. The diagnosis of tuberculous meningitis had been made. Autopsy showed a large abscess in the substance of the cerebellum, the pus containing pneumococci. No evidence of ear trouble was found. It is possible that the starting point may have been the bronchitis which was present on admission.

Protective Vaccination for Varicella.—Ed. Handrick (Monatsschr. f. Kinderheil.) says that Kling inoculated children who had been exposed to varicella with serum obtained from the pustules of the sick children, with a view to obtaining prevention of the disease. After vaccination in this manner there were seen at the site of inoculation typical varicella blebs which matured and dried in the normal manner. In some children a modified form of the illness occurred. When this inoculation was carried from one child to another there appeared to be a preventive effect. Of ninety-five cases exposed to varicella, thirty-one were inoculated. Only one of these took the disease. Of the sixty-four unvaccinated children forty-four took the disease. The author repeated this experiment on three small groups of children with the following results: He found that of 127 inoculated children, forty-five later developed varicella. He therefore, believes that we have not yet attained a practical method of prevention of varicella by this method.

Emulsions of Liquid Paraffin and Castor Oil in Treatment of Certain Types of Chronic Dyspepsia in Childhood.—C. McNeil (Edinb. Med. Jour., 1915, n. s. xiv, 100) says that emulsions of liquid paraffin or of castor oil (in small nonpurgative doses) are of great value in the treatment of various and apparently distinct types of chronic dyspepsia in childhood. The types dealt with are: (a) Malnutrition, frequently associated with chronic diarrhea, and only seldom with constipation; (b) enuresis, with dyspeptic symptoms; (c) recurrent vomiting (cyclical or bilious vomiting); (d) recurrent attacks of fainting, or sudden pallor; (e) urticaria or eczema, with dyspeptic symptoms. In a great majority of these diverse types of illness there is an abnormal condition of the stools; this may often be a true diarrhea, but not seldom also merely a too soft consistence of the stool with or without the presence of mucus. In the series constipation was present in only a small majority. A large number of these cases have followed the common infectious fevers of childhood, especially measles and whooping cough. These postinfection cases of dyspepsia seem particularly amenable to this form of treatment. In a series of thirteen completed cases of enuresis, eight were cured and three greatly benefited by this treatment. The action of emulsions of liquid paraffin, mxxx, and castor oil, mxv, t.i.d. is similar. It is entirely local, and is confined to the mucous membranes of the alimentary tract. The action is most probably a sedative one, exerted on the congested and unhealthy mucous lining of the small and large intestines. Cod-liver oil is a direct nutriment. Liquid paraffin has no nutritive value, and can only subserve nutrition by its ameliorative action on the digestive surfaces of the bowel. If the digestion is at fault, the use of cod-liver oil, instead of promoting nutrition, may actually retard it, by depressing the activity of secretion in the stomach; while petroleum emulsion will often quickly improve the efficiency of digestion. Where malnutrition is therefore associated with chronic dyspepsia, liquid paraffin may be employed from the outset; while cod-liver oil should as a rule be reserved to a later period when the dyspepsia has been overcome or improved.

Mouth Infection as a Source of Systemic Disease.—Billings (Jour. Amer. Med Assoc., 1914, xliii, 2024) confines his remarks to alveolar infection of the jaws are related to systemic disease. Chronic arthritis has been especially studied, and in order to make a proper diagnosis of the disease radiographic films of the jaw must be made. Alveolar infection and root abscesses may be primary and due to unhygienic conditions of the mouth, but Billings believes that irrational dentistry—teeth with infected pulp, crowned or improperly filled—prolongs and intensifies the infection. The chief systemic diseases induced by such infection are malignant endocarditis, chronic arthritis, and myositis. Cultures were made from the infected alveoli and tooth sockets. The dominant organisms found belong to the streptococcus-pneumococcus group. In addition staphylococci, a fusiform bacillus, the Bacillus aerogenes capsulatus, and various saprophytic organisms were found. In five patients suffering from Hodgkin's disease, an alveolar abscess has culturally yielded the diphtheroid bacillus, which is found in the enlarged lymph nodes in that disease. After removal of the source of infection the attempt should be made to increase the defences of the body against the systemic infection. Autogenous vaccines may be used to assist the body in overcoming the systemic infection but should be considered only as aids in the treatment. General hygienic and tonic measures to increase the resistance of the patient are essential. The treatment of chronic joint affections is long and tedious and must be supplemented by graduated passive and active exercise and other measures to improve the local circulation in the joints involved.—Amer. Jour. Obs. and Dis. Women and Child.

Precocious Maturity in Girls.—F. Beekman (Arch. Pediat., 1915, xxxii, 4) records a case of precocious maturity in a girl six and a half years of age. Nothing abnormal was noticed until she was about four years of age, when she commenced to have peculiar laughing spells, which at times lasted as long as an hour. Soon after this it was noticed that her breasts were becoming prominent and she commenced to bleed from her vagina periodically. Her mental development was about that of girls of her age, though her bodily development was that of a young woman of sixteen. Radiograms of the elbow joint showed ossification resembling a development of at least sixteen or seventeen years of age. Reviewing the literature, Beekman says that the symptoms of precocious maturity in the female are the onset of the changes due to puberty. The changes manifested are both anatomical and functional, but the mental development does not keep pace with the somatic. Abnormal development in children associated with tumors ("hypernephromas") springing from the cortex of the adrenal gland cannot be considered as true cases of precocious maturity. Precocious maturity is due to conditions affecting the internal secretion of certain of the ductless glands. It is probably caused by the premature activity of the interstital cells of the ovaries, which activity is produced either by some intrinsic factor or by the effect of a hormone from the hypophysis cerebri, pineal gland or possibly thyroid.

The Vaccine Treatment of Typhoid.—V. Koranyi (Wein. klin. Wchnschr., 1915, xxviii, 85) reports a series of cases of typhoid which were treated by Schikawa's serum. This serum is, briefly, a mixture of typhoid bacilli and serum from typhoid convalescents. The details of the preparation of the serum are not given in this article. In all, 24 cases were treated with no mortality. A considerable reaction, as a rule, followed the injection of the serum usually in the form of chills and a rise of temperature followed by a sudden fall. The fall in temperature was so marked that at times the temperature became subnormal. He divides the cases treated into four groups: First, those that make an unevently recovery with, as a rule, a critical fall in temperature. The second group includes those cases in which the temperature rises moderately after the injection of serum and then comes down by lysis in a few days. The third group comprises those cases in which after a sharp rise in temperature there is a sudden and decided improvement in the clinical symptoms. The fourth group includes those cases that did not seem to be influenced favorably or otherwise by the injection of the vaccine. V. Koranyi says that it cannot be definitely determined whether a revaccination would not help after the primary vaccination failed. He believes that some cases of typhoid fever can be aborted by means of this vaccine. The first week of the disease is the best time for successful treatment. He adds that cases that have been aborted and subsequently recur usually respond the second time to the abortive treatment.

Institutional Mortality of the New-Born.—L. E. Holt and E. C. Babbitt (Jour. A. M. A., 1915, lxiv, 287) have analyzed the records of 10,000 consecutive confinements in the Sloane Hospital for Women. The deaths in the hospital during the first fourteen days were 3 per cent of the living births. For half this number prematurity was responsible. Forty-eight per cent of the total deaths and 66 per cent of those due to prematurity occurred on the first day. Congenital weakness and atelectasis together made up 58 per cent of the total deaths. The mortality from conditions intimately connected with delivery—accidents of labor, hemorrhage, sepsis and asphyxia—together made up but 20 per cent of the deaths of the first fourteen days. Malformations and congenital diseases other than syphilis caused 4 per cent, and syphilis 4 per cent. The only important disease developing after birth was pneumonia. Stillbirths must be reckoned as one of the large problems in infant mortality; they are one and a half times as many as the deaths from all causes during the first two weeks. Except for the larger role played by syphilis, the causes of stillbirth in no way differ from those which produce death during the first days of life. When we come to consider to what degree preventive measures might influence the mortality of the first two weeks of life, two things stand out prominently: The great number of deaths from congenital weakness can be reduced only by care of the mother during her pregnancy. the number of stillbirths and the deaths from causes connected with parturition can be largely reduced by good obstetrics.

The Cause of Icterus Neonatorum.—Heynemann (Ztschr. f. Geburtsh. u. Gynak., 1915, Band lxxxvi, Heft 3) reviews the various theories advanced regarding the causation of icterus in the newborn. In Veit's clinic in Halle he has examined the available material and finds the primary and essential cause to be deficient functional activity in the liver cells in the first days of infantile life. The circumstances which tend to produce this condition are congestion of the liver and unusually rapid disintegration of the red blood cells. The cause of the latter is not clearly known. It seems probable that one must refer it to increased activity in some of the nuclei of the liver cells.

Serum Therapy of Epidemic Cerebrospinal Meningitis in Childhood.—A. C. Helmick (Ohio State Med. Jour., 1915, xi, 17) says that unless there are disturbing evidences of pressure, children over two years should reveive 30 c.c. of serum, and babies 15 c.c., as a minimum dose, regardless of the amount of fluid withdrawn. Thirty cubic centimeters is the standard dose in mild cases, and in the chronic form where the organism is present. In the more severe form, and in fulminating cases one should give serum sufficient in amount to give evidence of intradural pressure, and a sensation of abnormal resistance. In all except the fulminating cases the dosage should not be repeated oftener than once in twenty-four hours, unless the symptoms become intensified. Every case, regardless of severity, should receive at least four injections of serum and if diplococci persist after the fourth dose a continued daily dosage until they have disappeared.

BOOK REVIEWS

The Ductless Glandular Diseases, by Wilhelm Falta, Vienna, translated and edited by Milton K. Meyers, M.D., with a foreword by Archibald E. Garrod, M.D. (Oxon.) F.R.C.P. (London), F.R.S., with 101 illustrations in the Text. 590 pages, handsome buckram bindings. $7.00 net. P. Blakiston's Sons & Co., 1012 Walnut Street, Philadelphia.

Considerable impetus has been given to the study of internal secretions in the last two decades which justifies the publishing of the diseases of the ductless glands connectedly. This volume very satisfactorily delineates the clinical aspects of the diseases of the ductless glands. The author and translator include of the results of experimental pathology, only such as are necessary for the explanation of clinical manifestations. The clinical symptomatology described in these chapters are based on personal observations made for the most part at the first medical clinic in Vienna.

The aim of the American editor has been to furnish, not only a faithful rendering of the German text, but a rounding out of the subject by the consideration of .recent American and English views. To this end he has consulted a wealth of material comprising many hundreds of references and numerous original articles. The large volume of literature consulted has been properly digested and classified thereby giving the reader the gist of the latest and most reliable information towards raising the status of the ductless glandular diseases to the level of an exact science. The translator has supplemented the chapters with an addendum giving the latest American and English views on the subject matter covered in the chapters. Much care has been taken with these addenda so as not to confuse the clear cut scheme of Falta, who so admirably separates the various groups of ductless glandular diseases by well-defined lines.

In this work the internal secretions are studied most carefully with an idea of realizing how wide is the field of their activities. From the text matter we learn that in addition to the control of metabolism, or rather in virtue of that control, the endocrine glands exert immense influence upon growth and development; and that their hormonic functions are exercised first in the direction of stimulation, and second in that of restraint. For the first time we are able to understand that this control is not wholly one-sided; this controlling agent according to the authors is able to curb as well as to urge on, and we are taught to think of inhibiting as well as of exciting hormones.

The influences of the glands of internal secretion, in which category are included other organs besides the glands which are classed as ductless, hold a very prominent place in medical thought and investigation, as witness the many discussions which took place in various sections of the 17th International Medical Congress, London, 1913, and in many informal gatherings of its members from all parts of the civilized world. There is indeed no department of physiology in which more has been learned from the experiments which nature herself has carried out.

The interrelation of the endocrine glands and the nervous system is another subject full of interest, which reaches full consideration by Prof. Falta. This work for the first time describes the maladies of the hormonopoietic system which are discussed from a clinical viewpoint. It will be welcomed by members of the medical profession in all lands for in it will be found accurate and detailed descriptions of the symptom groups which have their origin in lesions of the glands of internal secretion, and also of some diseases for which such an origin has been suggested.

The work is a most valuable one because it combines bedside observation with experimental research in the laboratory. Professor Falta's contributions to our knowledge of pathological chemistry are widely known, and he has been led to the study of the regulators of metabolism by his interest in the chemical processes which it is their function to control. This is a work that all advanced students of internal medicine should have for ready reference in their library.

The Individual Delinquent, by William Healy, A.B.M.D., Director of the Psychopathic Institute, Juvenile Court, Chicago; Associate Professor Mental and Nervous Diseases, Chicago Polyclinic. 862 pages. Price $5.00 net. Published by Little, Brown & Co., Boston, 1915.

The author has been unsually fortunate in his opportunities for the exhaustive study of the delinquent. In his preface he says: "It has been a joy to direct for five years the important scientific tasks which find expression in the present volume." This volume without doubt is the most important and most instructive book on the subject heretofore written. Dr. Healy's masterly insight into this subject and his indefatigable energy and his mental make up, safely and collectively have helped him in making a clear and unusually valuable contribution to the literature of the world on this subject.

The conception of the personnel of his examining and working force in the investigations necessary in dealing with the individual case, is unusually broad. Being a medical man of ripe years and great experience with an appreciation of the importance of the physician in this field of work, he says "not only because they have knowledge of pathological conditions, but also of their acquaintance with physiological norms." He therefore values the work of the psycho-neurologist. Every detail of the examination and investigations allied thereto are gone into with a more thorough result and careful medical training and accurate case-taking which is necessary to the medical diagnostician. He points out the value of tact in examinations: "A tactful approach to the individual is in many cases a matter of deep concern, and inasmuch as upon it depend such success or failure." He thoroughly appreciates the value of correct records of cases: "We need accurate and full records of facts and modifying collateral circumstances, and we want complete accounts of results of introspection. Samples of phraseology and direct statements of points of view should be carefully set down," and the Schedule of Data Concerning Delinquents is by far the most comprehensive and inclusive that the reviewer has heretofore observed. Every possible condition which might act as a cause of the delinquency or the mental or moral defect has been considered, many of them in minute detail, and the methods used to determine this cause as well as its direct and indirect effect have been dwelt upon at length.

Dr. Healy points out that examination of the individual delinquent should be considered from every angle, ante-natal, post-natal, environmental and hereditary. This stupendous work of 862 pages includes a bibliography of nearly 400 references; a handy working index, and a splendidly arranged "Table of Contents," and all those who have to deal with offenders will find in these pages valuable aids in helping them to understand the delinquences of human beings.

He deserves the gratitude and confidence not only of the medical profession, but of all who are interested in any way in obtaining a more thorough insight and betterment of conditions of either the delinquent, the feeble-minded or the criminal. It is a pleasure to commend such a book to all those who are interested in any way in the above subjects.

Simplified Infant Feeding, by Roger H. Dennett, B.S., M.D., Adjunct Professor of Diseases of Children, New York Post-Graduate Medical School; Attending Physician of the Children's Department, New York Post-Graduate Hospital; Assistant Attending Physician at the Willard Parker Hospital and the Red Cross Hospital, New York. 14 Illustrations. Cloth, $3.00 net. J. B. Lippincott Company, Philadelphia and London, 1915.

The newest work on Simplified Infant Feeding comes from the pen of Roger H. Dennett of the Post-Graduate Medical School in New York City. This work is the result of his extensive experience in teaching postgraduate students and the want for a trustworthy guide in the simplified feeding of infants prompted Dr. Dennett to prepare this book presenting the subject in simple form so that the busy practitioner can find detailed instructions as to just how he is to feed the different babies with whom he comes in daily contact.

The book that tells in detail just how to feed an infant is of much more assistance to a physician than one which deals in generalities. There seems to be much objection to the words "method" and "system" in describing infant feeding. It is very popular to say that "every case is a law unto itself." Such a statement tells nothing and is, moreover, not true. In every other branch of medicine, we have a definite method of procedure, and while it is true that there are individual peculiarities of infants, they may be classified to a certain extent, at least, as the author has undertaken to do in this work.

After reviewing the scientific principles bearing on the question, the author goes into the actual application of these principles. He does this in such a clear, simple way that his meaning in every instance is at once apparent. The articles on the breast and breast milk, the technique of breast-nursing, and the nutritional disturbances of the breast-fed infant the reader will find of daily service. Nowhere else, in any language, can you get the information this book gives you. Artificial feeding, again, he presents it in the same forceful, definite way, giving a number of simple formulae. It is a work that should be in the hands of every physician who is called upon to give advice where the subject of feeding babies is concerned. It is both a pleasure and a duty to hand this volume to the profession.

The Care of the Baby, by J. P. Crozier Griffith, M.D., Professor of Diseases of Children in the University of Pennsylvania. Sixth edition, thoroughly revised. 12 mo. of 463 pages, illustrated. Cloth, $1.50 net. W. B. Saunders Company, Philadelphia and London, 1915.

The fact that this instructive hand-book on the Care of the Baby has reached its sixth edition speaks for its appreciation by the profession who recommend it to the mothers, to whom it is a most valuable guide for all information which they may be in need of before and after the baby comes. In this last revision, many new illustrations have been added and a number of others altered to make them thoroughly modern, and the text entirely reset. That portion of the book bearing upon management of pregnancy and allied topics has been revised and re-written by Professor Barton Cooke Hirst of the University of Pennsylvania. The first chapter of this work discusses the subject of hygiene of pregnancy, followed by a chapter on the growth of the mind and body of the infant. The chapter on the baby's diseases has been written particularly for mothers, who through various circumstances are unable to have a physician constantly within a moment's call. Many valuable truths are found in this chapter, ending with the consideration of the nursing of sick children.

Such illustrations are found in this volume as is thought will aid in making the meaning of the author clear and more explicit. Many valuable receipts are incorporated in this book for the convenience of the mother, such as the employment of baths for various diseased conditions, the preparation of poultices, disinfectants, massage and the like. Also tables showing the proper proportionate doses at different ages. The author has endeavored to make his statements plain and easily understood, while scientifically accurate and in this he has succeeded well. The last edition is thoroughly up-to-date and a physician could not recommend a better book to a prospective mother than Griffith's Care of the Baby.

PEDIATRICS

Vol. XXVII SEPTEMBER, 1915 No. 9

EDITORIAL

CANCER IN CHILDREN

Views as to the occurrence of cancer in children are conflicting. While the consensus of opinion is that malignant disease does occur in childhood, perhaps, most of those who have investigated the matter hold that its incidence in early life is rare. Williams, indeed in his well known work, "The Natural History of Cancer," concludes that pre-natal life, infancy and childhood are wholly exempt from malignant epithelial tumors. He gives the earliest age at which carcinoma has been positively demonstrated as eleven years. He asserts that before the age of puberty cancer is practically unknown. A. S. Warthin in Archives of Internal Medicine, March, 1915, says that sarcoma predominates in the period of infancy and childhood, but the parallel increase of both sarcoma and carcinoma with age is noteworthy and in contradiction to the usual belief that sarcoma is essentially a disease of childhood. The cases of malignant teratomas fall in the periods of early childhood and developing sexual life. Particularly is this the case with the malignant teratomas of testis and ovary, the majority of these cases developing after puberty and in the early period of sexual maturity. Warthin's list contradicts in many respects the conclusions arrived at by Williams, and gives undoubted examples of earlier carcinoma. Warthin's conclusions are that malignant tumors are relatively rare before puberty, but that there is a steady ascending line of occurrence from childhood to middle life, both sarcoma and carcinoma showing a parallelism of occurrence. Warthin's investigations in a large measure support Williams' view of the congenital or teratoid origin of malignant neoplasms in infancy and early life. The tendency to malignant tumor is relatively slight before sexual maturity is reached, increases during the period of sexual maturity up to the age period of

58 to 62. With the decline of the organism the tendency to malignant neoplasm decreases.

The other side of the case is presented by W. A. Edwards in American Journal of Medical Sciences, July, 1909. He avers that malignant disease in children is fairly frequent, especially, perhaps, in the genital organs. Disease of the uterus, tubes, ovaries and vagina in children are far more frequent than is generally supposed. Lusk, in 1888, wrote that no case of uterine sarcoma is known to have occurred previous to puberty In order to show the frequency to pelvic disease in children, Bland Sutton some few years ago collected one hundred cases of ovariotomies performed on children under six years of age Weil has added sixty cases under sixteen years of age, while Edwards himself has had over two hundred and seventy-five references to pelvic and abdominal disease in little children. In the child certain growths seem to have certain selective age periods. Sarcoma and dermoids usually occur under the third year, and ovarian cysts become more frequent about puberty. Some very early successful cases of removal of sarcoma of the ovary have been recorded. Harris. for example. removed such a tumor in a child aged twenty-two months Hoffman's patient was aged thirty months. Byford had a successful case at the age of four years and eight months. Altogether a large number of sarcomatous ovaries have been observed and recorded in children from an early age up to about the eighteenth year, nor, according to Edwards, is carcinoma of these structures unknown during the earlier years of life Edwards cites many cases from literature to prove his argument and says that many more could be cited but holds that there is abundant evidence to show that the disease can be no longer considered extremely rare, even at the very early period of life. Sarcoma is most frequent.

Beveridge, in a paper which appeared in the New York Medical Journal, August 21, 1915, draws attention to protein absorption as a probable factor in the causation of cancer. If this theory of perverted metabolism be correct, and it seems the most reasonable so far as the origin of malignant disease is concerned then it may be applied to children as well as to adults although with less force; and again Beveridge (Amer. Med., Nov., 1914) calls attention to the cytogenic system becoming deranged through improper feeding in infancy which through excess of protein absorption as such will cause early abnormal cell growth in any embronic rest that may be so irritated. However, the fact cannot be gainsaid that diet is an important cause of sickness in the young, and it is just as obvious that children should be given but little protein and especially in the form of meat.

Holt says that malignant growths of the kidney, although not common occur in children; nearly all cases are varieties of sarcoma. This authority also notes that sarcomatous tumors of spinal cord have occurred in children. Sarcoma of the stomach while very rare has occurred in children.

In Garrod, Batten and Thursfield's text book of diseases of children the statement is made that sarcoma of the liver may occur in early childhood and that carcinoma in childhood is rare, a few cases have been recorded.

Campbell and Kerr, in their work on children's diseases from the surgical standpoint, say that the kidneys, the ovaries and the adrenals are very liable to become the site of sarcoma but by far the most common form of sarcoma in children is that of the kidney. Carcinoma is not nearly so common and when it does occur, the usual form is that of an encephatoma. Some cases of cancer in children may be congenital. It must, of course, be borne in mind that cancer sometimes develops in a congenital anomaly, for instance, in a teratoma; but the explanation of the origin of cancer there is just as difficult as in the case of apparently normal adult tissue.

Reviewing the literature of cancer the decision to be arrived at seems to be that cancer is rare in children, but that the sarcomatous form occurs more frequently than the carcinomatous.

Williams' contention that malignant disease does not appear before the age of puberty is overborne by the clinical experience of many surgeons. Edwards' contention that cancer is comparatively common in children is possibly open to some doubt, albeit he brings a great deal of evidence in support of his views.

The prevalence of cancer in children is really a point which has not as yet been decided. That it does occur is certain and that sarcoma is the usual form is also certain, but further investigations must be carried out ere any dogmatic statement can be made with regard to the frequency of cancer in children

ANAPHYLAXIS

In discussing the use of undiluted milk as a diet for infants and the part played in the result by the addition of small quantities of sodium citrate, seemingly has a favorable action in the relief of constipation, since the action of sodium citrate, though mild, belongs to the group of saline cathartics. The chief service which it renders to us in the difficulties of artificial infant feeding probably lies in the increased rapidity with which the stomach is emptied by its use.

Attention has comparatively recently been directed by Hamburger and others to a group of symptoms which are certainly the result of the ingestion of the protein in cow's milk. The entrance of a foreign protein into the circulation produces, as is well known, certain anaphylactic phenomena associated with precipitin formation. An infant which is fed upon protein derived from animal protein, which is specifically different from the proteins of the mother's milk, has more metabolic work thrown upon his digestion than the child fed at the breast It is not only the amount of protein which counts, but also its specificity. The child by the force of digestion must remove specific properties from the protein before absorption takes place. In undisturbed digestion this work is usually efficiently carried out, and the protein molecules of the cow's wilk are very completely broken down. In disturbed digestion, on the other hand, the specific characters of the protein may not all be lost, and its absorption into the bloodstream may serve to provoke certain violent reactions. Chief among such anaphylactic phenomena are a variety of cutaneous rashes. Often these closely resemble the rash of scarlet fever still more often that of measles. Indeed, such a diagnosis has more than once been made within my own experience. At other times the rash is more strictly urticarial in character, comparable to that which is apt to appear after the injection of antidiptheritic or other serum. Sometimes there is marked oedema of the face and eyelids and of the extremities. As a rule the rash as well as the oedema is very transitory, so that it sometimes fades away even while examination is in progress.

It is beyond question that the excess of casein in cow's milk cannot in the light of our present knowledge, be looked upon as the primary cause of the actual cause of acid diarrhoea or vomiting of infants.

DISTURBANCES WITH CARBOHYDRATE OVER-FEEDING

Long-continued feeding upon a mixture which, while rich in carbohydrates, is extremely poor in fats, protein, and salts results in a well-defined group of symptoms.

In England, as well as in this country, prolonged carbohydrate over-feeding is almost exclusively the result of feeding with various largely advertised proprietary foods consisting mostly of starch, or with sweetened condensed milk. Mothers and nurses, in complete ignorance of the nature and the composition of the advertised food, make use of it on the recommendation of a friend, or because of the promises held out by the proprietors. Sometimes when a proprietary food is ordered to supplement a diet of cow's milk the whole improvement which follows is attributed to the food, with the result that the amount of milk given is lessened and the amount of the starchy food increased until the diet becomes so one-sided as to produce impairment of development.

Symptoms.—The one-sided feeding must have continued for a long time before permanent changes in the appearance of the child result. It is a fortunate accident if the excess of starch or sugar results in an attack of dyspepsia which leads to medical advice being sought before permanent damage is done. If diarrhoea remains absent and the one-sided feeding continues unchecked, sooner or later trouble occurs. The damage is not wrought simply by the excess of carbohydrates; indeed, if there is no dyspepsia we may conclude that the tolerance for carbohydrate, at any rate at the outset, was unusually good. The evil is done by the poverty of the diet in some other essential constituents—protein, fat, or salts. For a long time the child may continue to increase in weight, and the presumption that the diet has been well chosen is strengthened. Such children are often large and well grown, agile and of good color. In not a few, however, there soon comes a change. The weight ceases to rise, the appetite fails, and sooner or later, often enough too late, it becomes apparent that something is seriously wrong.

By the time that advice is sought there is generally a high degree of atrophy present. This atrophy, we are told, has appeared with astonishing rapidity, and in a few weeks the infant has lost all the appearance of plumpness and health.

This sudden fall of weight is due to a loss not of fat, but of water The effect of a sugar-diet is to retain a large amount of water in the tissues. The appearance of plumpness which persisted for so long was largely deceptive, and was due to this water content of the tissues. When advice is sought there may actually be oedema of the extremities, an oedema not due to nephritis and not accompanied by albuminuria. The dropsy is apt to increase or to appear after a sudden attack of diarrhoea which has temporarily depleted the tissues of water. It is therefore often noticed in such children in convalescence from diarrhoea when, with renewed appetite for food, the intake of salt again rises. It commonly appears upon the dorsum of the feet and hands and is often accompanied by a marked cyanosis of the extremities.

A severe case of atrophy from carbohydrate over-feeding has a characteristic appearance. The body is emaciated, while the face, in contrast, may remain plump and rounded; the lips are bright red in contrast to the general pallor of the body. The skin appears too large, and hangs in folds on the limbs; its texture is tough, dry, and harsh. There is often a scaly desquamation. The mouth is dry and devoid of secretion. Thrush is frequent. The extremities are often cyanosed, sometimes oedematous. The temperature is usually subnormal. The abdomen is often distended with gas, and hernia is frequent. The stools are not characteristic; constipation and diarrhoea often alternate. The urine is usually normal, or an alimentary glycosuria may be present from time to time. Complete want of appetite is a constant symptom. The tone of the muscles may be increased; the movements of the limbs are slow and feeble· the child is apathetic and fretful. The cry is often hoarse and aphonic, from the dryness of the larynx. Pronounced rachitic symptoms are not common.

Very often the true extent of the wasting is masked by the watery condition of the subcutaneous tissue. The retained water is, however, liable to be lost at any time within a few days, when the full severity of the condition displays itself even to the untrained eye. This sudden change is apt to take place for two reasons. In the first place, such infants are liable at any time to develop a severe attack of dyspepsia because of the excess of carbohydrate in the diet, and the resulting diarrhoea quickly depletes the tissues of water. In the second place, there is no condition in which the immunity to infections of all sorts is more profoundly lowered. Bronchitis, broncho-pneumonia, nasopharyngitis, furunculosis, empyema, are all common.

MENINGITIS IN INFANCY DEPENDENT ON BACILLUS COLI COMMUNIS

Meningitis in infancy is seldom the result of infection by the bacillus coli communis. In the Lancet, July 27, 1912, Dr. E. U. Smith and A. W. C. Woodforde report such an occurrence. The child thus attacked was five months old and cultural examinations of fluid obtained by lumbar puncture showed conclusively the presence of the bacillus coli. Treatment by vaccine seemed for a time to be effective, but eventually the child died. A necropsy was refused but that the cause of the meningitis was infection by bacillus coli appears certain. Primary bacillus coli infection appears to be either a very little noted or an extremely rare affection. The literature on the subject is very scanty but from a review of cases recorded by Hoit, Nobecourt and Dr. Pasquick, Noeggerath and Scherer it would seem that primary B. coli meningitis is a disease of infancy and manifests itself in two forms, (a) as a serous meningitis, (b) as a suppurative meningitis. Further consideration shows that as regards symptoms the disease is indeterminable from other types of acute meningitis, while as regards prognosis it is by no means invariably fatal. Recovery may be presumably complete or be attended by sequelae such as may follow any acute meningitis as mental deficiency, hydrocephalus, loss of special senses, etc. A differential diagnosis from other types of meningitis can only be made by a careful examination of the contents of the cerebro-spinal fluid which should reveal the presence of the pneumococcal, tubercle bacillus or other offending organisms. Where typhoid is in dispute, a Widal reaction and the separate cultural features of the two organisms will easily distinguish them.

PEDIATRICS

ORIGINAL ARTICLES

ON THE RELATION OF TUBERCULOSIS IN CHILDREN TO THE TUBERCULOSIS PROBLEM

BY H. J. ACHARD, M.D.
Asheville, N. C.

Views Then and Now.—Not many years ago, the teachings concerning tuberculosis as it affects children were almost entirely limited to the surgical forms of tuberculosis of the glandular structures and of bones and points. Pulmonary tuberculosis, so we were told, occurred but rarely in children, except in an acute form; then a miliary dissemination speedily terminated in death. In the first two years of life, any tuberculous infection was surely followed by some fatal disease. Tuberculous meningitis also was known—and feared; for, among many thousands of cases mentioned in literature, only very few isolated instances of recovery were recorded. The affection of the glands was held to be owing to a quantitatively slight or to a slightly virulent infection, and the "scrofulous" children of today were believed to represent the consumptives of tomorrow. Bone and joint-tuberculosis was the subject of a veritable furor operativus equalled only by that which fifteen or twenty years ago played such sad havoc with the genital organs of the women.

But "we have changed all that." The researches of the last ten years have demonstrated that tuberculosis is exceedingly prevalent in childhood; that even nurslings are not inevitably doomed if they become infected during the first year of life; that pulmonary tuberculosis is almost as frequent among children as it is among adults; that a tuberculous process limited to the lymph glands is proof of a congenital or acquired resistance, especially if there exists a tendency to fibrosis; that surgical tuberculosis can be favorably influenced, and even healed, without resorting to operation; and, above all, we have learned that tuberculosis, to quote a famous German pediatrist, is essentially a disease of children, in that the seed of adult tuberculosis, in the majority of cases, is planted during early childhood. The problem of tuberculosis, with its years of suffering, of inability to work, of all its attending evils, therefore hinges largely upon that of childhood tuberculosis; and the old homely saying that "prevention is better than cure," which occupies such an important place in modern medicine is nowhere as true as it is in this very instance.

Tuberculous Lesions in Persons not Dead from Tuberculosis.—With reference to the frequency of tuberculosis in children, it will be remembered that in 1903 a series of investigations was instituted in Zuerich, by Naegeli, in which the attempt was made to ascertain to what extent tuberculous lesions, either healed, latent or obsolete, could be found at the necropsy of persons who had died of diseases other than tuberculosis. According to the data thus collected, in Zuerich, Leipsig, Berlin Christiania, and in various other places, tuberculous lesions were found in the bodies of persons who had died, respectively, at the age of puberty or some time later as ranging between 50 per cent (in Berlin) and over 90 per cent (in Zuerich). Far from being alarming, this unexpectedly great prevalence was rather consoling, for we well know that less than one-seventh of all persons living die of some form of tuberculous disease. Holding the two facts together, we must conclude that the majority of individuals in civilized (so called!) countries possess a fair degree of resistance to the pathogenic action of the tubercle-bacillus.

When in 1907, the local tuberculin tests were inaugurated with the cutaneous tuberculin test of von Pirquet, their value for researches similar to those just alluded to soon was recognized. It was found that, at least after the second year of life and probably even before then, the positive reaction of the cutaneous tuberculin test is not to be interpreted as showing the existence of any active tuberculous disease, but that a positive von Pirquet reaction denotes that the reacting organism at one time or another has been infected with tubercle-bacilli. Consequently, it became possible to determine in what ratio tuberculous infection prevails at various periods of life, in different localities, in different walks of life.

Without citing any particular researches, I may say that, as regards the hospitals of Vienna, among children up to 14 years of age, and mostly ill with non-tuberculous acute disease, the frequency of tuberculization—that is, of infection—was found to rise rapidly from about 5 per cent during the first year of life to over 90 per cent at the age of 14 years.

The material for these investigations was of a peculiarly unfavorable nature and, therefore, shows extremes. However, a tabulation of over 3000 cases of examination of clinically non tuberculous, and of a somewhat larger number of unselected children, culled from medical literature and representing both favorable and unfavorable material (K. v Ruck and H. J. Achard Pediatrics, Dec., 1913), shows that the frequency of reaction in the former class rises rapidly, from 1.18 per cent in the first year of life, to 54.29 per cent in the fourteenth year; and in the latter from 6.97 per cent in the first year of life to 59.25 per cent in the fourteenth year. The examination of 650 school children in a small town in Germany showed that the frequency of a positive reaction was markedly increased after the children had left the shelter and comparative isolation of the home and had been attending school for one year.

Relative Immunity Established in Early Infancy.—These figures might be extended indefinitely, but that would not strengthen the force of the conclusion, which is unavoidable even from what I already have said, namely, that by far the greatest number of tuberculous infections occur in early childhood This fact today is recognized by most investigators: and, while its extreme supporters assert it to be almost without exception, even conservative clinicians admit that it is true for at least 75 per cent of all cases of tuberculosis in the adult.

This means that in three-fourths of all cases of tuberculosis in adults, the infection responsible for the disease took place during childhood, and, further, that their immunity was developed then, but was later broken down again through some predisposing cause. In not more than one-fourth of all the instances of adult tuberculosis is the infection a recent and "exogenic" one. This knowledge certainly should prove consolatory to those foolish persons who are afraid even to come near a tuberculous patient, for fear of being infected.

Why Not Every Tuberculous Child Dies In Infancy.—This being true, the question arose as to why it is that not all these infected children die of tuberculosis. Even today some text books assert that infants in the first year of life are absolutely non resistant to tuberculous infection, their mortality from tuberculosis being 100 per cent; and that it still stands at 80 per cent among infants in their second year.

Yet the tuberculin reaction elicited indubitably demonstrated that small children reacted to tuberculin, that is, that they were infected although not exhibiting any signs of tuberculous disease.

It is here that certain animal-experiments have afforded us a wealth of information, the value of which, for the benefit of mankind especially children—and, indeed, for the benefit of our domestic animals themselves—once more have justified these experimentations with animals, provided they are conducted properly, against all the insensate opposition and vituperations of sentimental ill-informed antivivisectionists.

First of all, it was discovered that tubercle-bacilli may exist in the organs, especially in the lymph-glands, of children—even of infants—without causing any tuberculous lesions or, in fact any disease. Yet, that these same tubercle-bacilli were both viable and virulent was proved by the fact that tissue thus infected, when inoculated into guinea-pigs, is capable of producing progressive tuberculosis.

This proved two things: first, it followed that tuberculous infection is not identical with, and not necessarily followed by, tuberculous disease, but that it may remain dormant or latent; and, secondly, it suggested (and this then was proved by detailed experiments, especially by Bartel, of Vienna) that the lymph-glands or rather, the lymphoid tissues, possess the power of inhibiting the growth and proliferation of tubercle-bacilli Hence, the far greater amount of lymphoid tissue present in children, as compared with that in adults, constitutes a fortunate provision of nature, calculated to aid in protecting the youthful organism against the consequences of infection with the tubercle bacillus

Acquired Immunity to Tuberculosis.—But there is more.

It has been known for a long time that a single attack of smallpox, of scarlet-fever, of whooping-cough, et al., if recovered from, protects against another attack, by establishing an immunity against the virus of such a disease. Concerning tuberculosis, it has been taught that no such immunity was conferred; indeed it has been believed that actually the reverse is true, so that a first attack inevitably leads to progressive disease

Nothing of the sort is true, as a matter of fact. In 1890, Koch showed that even a tuberculous guinea-pig possesses a certain degree of immunity against a second infection. Proceeding from this fact, it thereupon was definitely determined that a tuberculous infection, provided it is not too massive for the organism so infected, produces a certain degree of immunity and, moreover, that this immunity is further increased by each subsequent infection that is successfully resisted. As a matter of fact, from the day the child leaves the shelter of the house it, exactly like the adult, is exposed many times to infection with the tubercle-bacillus, which is inhaled with the ubiquitous dust. Luckily, these infections are quantitatively slight and can be resisted, with the result that a specific anti-tuberculosis immunity is acquired. However, if at any time the organism is weakened, as, for example, by teething, measles, scarlet fever, whooping-cough, or by other circumstance, including unfavorable environment (crowded tenement-home), insufficient or improper food, excessive exertion, then the immunity is destroyed, the tubercle-bacilli proceed to multiply, and tuberculous disease finds establishment.

If anybody doubts that an anti-tuberculous immunity does develop spontaneously, it is only necessary to compare the frequency of the infection (as shown by the positive von Pirquet reaction) with the morbidity and the mortality of tuberculosis. The first represents more than 90 per cent of all living humans; the second between 20 and 30 per cent (estimated); and the third about 11 per cent. This means that about 70 per cent of all human beings acquire a tuberculous infection, without, however contracting the disease. And why is this? Because the individuals develop an active immunity against it, and this prevents the infection from actively developing into disease.

Immunity Transmitted By the Mother.—Another thing is true

An examination of the umbilical blood in over 130 newborn children developed the fact that whenever the mother had a history of tuberculosis, this blood contained anti-tuberculous immune-substances. In 6 infants whose mothers had been treated with Watery Extract of Tubercle-Bacilli, these immune-substances in their umbilical blood included considerable amounts of the bactericidal antibodies, and in 2 of them, in whom the examinations could be repeated, these antibodies still were present when the babies had attained the age of 2 years. This shows that tuberculous mothers who are overcoming their own disease transmit a degree of immunity to their offspring, which often is sufficient to protect the latter against slight early infections in their infancy. And this congenital immunity is readily increased by virtue of the physiological response of the organism to any slight infections, as well as by artificial immunization.

In this nature offers us a hint of how to fight tuberculosis.

Merely to avoid infection will not do, however, because that is not possible; if it were possible, though, it would leave the organism highly susceptible to a chance exposure. In like manner, experience has shown that the vaccinated, that is, immunized organism, is safe from smallpox, while the unvaccinated organism yields to the infection.

Consequently, it is right enough to protect infants against known exposure to infection, yet, at the same time, they must be attended and guided in such a manner that they grow into healthy children and may be able to overcome the unavoidable first infection when it does come. The best way, to be sure, would be to vaccinate every child against tuberculosis as nowadays they are vaccinated against smallpox. But that is another story

I do not wish to be understood as saying that tuberculosis is not dangerous to children. It is; very much so; besides, while we know now that even infants may recover, the disease in them is more often fatal. Infants, therefore, should be protected most carefully against all possible sources of infection. They should never be kissed on the mouth by anybody, nor be kissed at all by strangers; the preliminary tasting of bottle- and of spoon-food by the nursegirl should be forbidden; the infants' liberty of action as to crawling on the floor should be confined to a dust-free sheet spread on a rug or carpet. While infection through milk does not offer very great dangers to older children, in nurslings this should be guarded against most scrupulously. Whenever possible, the milk supply for infants should be obtained from cows that do not react to tuberculin that are healthy, and that, in addition, are kept and handled in a proper manner.

In older children a policy of watchful waiting—with emphasis on the "watchful"—also is indicated.

Children of every age should be jealously guarded against all influences that interfere with their proper nutrition, as this is their best asset. A child that has a normal appetite for simple nutritious food, that evacuates the bowels regularly once or twice daily, that sleeps well o'nights, and that steadily gains in weight, may be looked upon as reasonably well protected against harmful consequences of tuberculous infection.

Growing children normally show a steady increase in weight, and the weight-record, therefore, affords a trustworthy index of their progress. If a child is under weight, if it fails to gain, has a poor appetite, lacks ambition, does not want to play, is easily tired—look out! It's dollars to doughnuts that the tubercle-bacillus has got in its work. Children, especially if not perfectly healthy, should be weighed every week and the weight recorded and charted; they should be carefully examined in the "altogether" at least once in six months, and the presence of enlarged glands, irregularities in chest sounds or of breathing, or other abnormal phenomena should be taken as danger-signals.

Prevention More Important Than All Else.—The most important factor in childhood tuberculosis is that of prevention; not a prevention that starts in when the damage has been done, but action taken before harm is possible. Just as the education of a boy should, according to Oliver Wendell Holmes, begin a hundred years before he is born, so the treatment of tuberculosis should start even before infection has taken place.

Nowhere else is the work of the family physician so important as in the prevention and in the early recognition of tuberculosis; meaning tuberculous disease long before it becoms consumption. To be sure, in order to recognize that, it requires study and knowledge, and many physicians—but that, too is another story.

The accepted treatment of tuberculous disease consists in providing good food, fresh air, and rest. These measures are excellent, if properly regulated; but in spite of what some prominent tuberculosis-men maintain, more is needed, and the physician who limits the treatment of tuberculosis to this triad, and deprives his patient of whatever benefit suitable remedies, up to specific treatment, may offer, had better change his occupation Abraham Jacobi, in his presidential address before the children's section of the Washington Tuberculosis Congress

(1908), insisted upon the benefit obtainable from properly selected drugs. The virtually agreed experience of tuberculosis-physicians is highly in favor of specific anti-tuberculosis treatment; and, to my mind, this latter measure is fully as important as food-air-rest, because it stimulates the production of immune-bodies. However, the specific treatment of tuberculosis in children requires a paper by itself.

I have attempted to show that the seed of tuberculosis in adults is, in the great majority of the victims, sown during their childhood. This fact evidently is of manifest importance for the tuberculosis-problem. It imposes the duty upon the general practitioner to watch all the children of his patrons carefully, constantly, and persistently. Let him teach the parents the reason. Let him show them that infection can not, as a rule, be prevented, but the disease can. The reason why the disease breaks out so often soon after puberty is to be found, in my opinion, in the additional strains incidental to puberty, to the beginning of a wage-earner's life, and to the greater liberty of action enjoyed by young people, as compared with school-children.

Hence it is up to the family physician to influence the young people of his clientele against burning the candle at both ends, against the "sowing of wild oats" (which bring a rotten harvest, anyway), against being too "smart." Let him teach them to lead reasonable, sensible lives, with plenty of good, honest work and a modicum of legitimate fun; but, together with lots of good, wholesome eats and lots of sleep.

In the tuberculosis-crusade which is being waged the world over, the family physician should do the most important work, because he has the chance to see the cases of tuberculous diseases in their actual incipiency. I wonder whether he realizes his opportunities and whether he is conscious of his responsibility. It is there; and the most important, the most far-reaching, the most promising part of his work lies with the children.—(Clinical Medicine.)

ORTHOPEDIC SURGERY*

BY A. H. TUBBY, M.S., F.R.C.S.

Surgeon, Westminster Hospital; Consulting Surgeon, Evelina Hospital; Surgeon, Royal National Orthopedic Hospital, Etc.

Orthopedic Surgery for the General Practitioner.—James Warren Sever (Inter-State Medical Journal, February, 1914, p. 125) discusses some common orthopedic affections which come more particularly under the notice of the general practitioner and he selects—

a. Limping in Children.
b. Lateral Curvature of the Spine.
c. Congenital Club-foot.
d. Synovitis of the Knee-joint, and
e. Infantile Paralysis,

as examples to illustrate his thesis.

a. Limping in children.—He remarks that it is almost a daily experience to see a child brought to the hospital on account of a limp in one leg of greater or less duration, and frequently the parents state the trouble is all in the knee. When the child is stripped and the character of the gait is noted, it will be seen at once whether the cause of the trouble is in the knee, hip, or ankle; further examination with the child on its back on the table will localize the trouble, which is generally in the hip. Pain in the knee without anything to show for it at that joint usually means hip trouble, both these joints, therefore, must always be examined carefully.

Another not uncommon cause of a limp is due to muscle strain of the leg following a fall or injury. In such cases, there is usually a slight limp of short duration, and a history of sudden onset after injury. On examination, it is found that there is very slight limitation of movement of the hip, especially in the directions of outward rotation and hyper-extension, and an X ray of the hip joint usually shows nothing abnormal. Some of these cases, however, are due to slight synovitis of the hip joint, analogous to "water on the knee," and readily clear up with rest in bed and a flannel spica. Other cases are, however, of a more severe description, and an X-ray shows a partially displaced epiphysis. If the displacement is not at all great the best method of treatment is to apply a plaster spica with the leg slightly abducted; when the pain has ceased the patient is allowed to get about on crutches. Still more severe examples of slipped epiphysis call for forcible abduction of the leg, under ether, followed by the use of plaster of Paris and later on of a metal splint, which will keep the leg abducted. As Royal Whitman has shown time after time, this is the correct treatment for such cases.

---

*The Practitioner, July, 1915.

When a limping child is seen, we should also bear in mind congenital dislocation of the hip, coxa vara and rickets, fracture of the neck of the femur and coxa valga. It should, therefore, be the rule not only to examine the hip and knee, but the spine as well. Tuberculosis of the spine, accompanied by a psoas abscess, causes a certain amount of flexion of the leg and irritation about the hip muscles; so that, when a patient attempts to walk, he will show some hesitation, of which the cause can be found on examination. A right-sided limp should lead to examination of the iliac fossa for an inflamed or suppurating appendix.

b. Lateral Curvature of the Spine.—To those who are doing school-inspection work, the following points should be emphasized. A child who carries one shoulder higher than the other probably has some kind of lateral curve, and so, too, has every girl who has a so-called high hip or large hip. It is necessary then to have the child stripped to the hips and examine the spine carefully.

Lateral curvature is of two kinds—

(1) postural or physiological, and
(2) structural or organic.

The first is curable by proper exercises, massage, and careful attention to the avoidance of mal-position. In the latter case, the treatment for the physiological type must be supplemented by some form of support, and it is well to recognize that in many cases it is useless or even harmful to carry out any treatment without instrumental support. It will readily be seen that when the spine is made more flexible by exercises it will consequently sag into a worse position than before, unless the improvement brought about by exercises, is maintained in the intervals by a support.

c. Congenital Club-foot.—A club-foot, improperly treated, is one of the most difficult problems we have to meet, but it can be cured absolutely, if the child is given adequate treatment early enough, and by this is meant within the first eight weeks of life. Time lost at the start can never be regained and the earlier the treatment is begun, the more normal the foot the patient will have later in life. Manipulations may be commenced from the first day, and a suitable form of retention splint applied. The great object to aim at is over-correction of the deformity, and over-correction as applied to a congenital club foot means a foot well everted, abducted, and capable of full dorsiflexion. Later on, massage, especially of the anterior and external muscles, the application of a light support for from six months to a year to maintain the over-correction, and the constant use of the foot in weight-bearing, when the child is old enough to walk, are the measures indicated.

d. Synovitis of the Knee-joint.—This common condition, known as "water on the knee," is generally the result of trauma, and may be antecedent to tuberculosis. The treatment, therefore, should be complete and thorough from the first; and the indications are to fix the joint, to prevent weight-bearing to diminish the pain and tension in the joint, to get rid of the excess of synovial fluid, and to restore function within a reasonable time, without too great loss of power and muscular atrophy of the leg. To carry out these objects, a posterior splint slightly bent at the knee, and rest in bed so as to keep the leg in a horizontal position are required. An ice-pack over the knee for 48 hours will limit the effusion, and it is rarely necessary, or indeed advisable, to tap the joint.

After the first few days, the patient can get about on crutches, the weight being taken off the joint, and then radiant heat and gentle massage are of service. After the first week, the splint is taken off, and the knee bandaged with a flannel bandage, after having placed a horse-shoe pad above the patella, so as to compress the synovial membrane fully, and then limited weight-bearing is allowed. The results are far better than if the splint is kept on for three weeks or more, in which time the joint, although it may have no fluid in it, will be found to be motionless and stiff, and several weeks may be spent in recovery of movement and in regaining muscular strength.

e. Infantile Paralysis.—This, especially in its epidemic form, is one of the diseases most to be dreaded. Recent experiences show that in the epidemic form the symptoms are often anomalous and misleading. The diagnosis before the onset of paralysis is extremely difficult, especially at the beginning of the epidemic. In an acute case of this kind, the first thing is absolute rest and free purgation. In many instances, the pain is relieved by putting the child on a Bradford frame, or using a plaster of Paris bandage. After the acute period, it is of the utmost importance to prevent stretching of the muscles, and the limb should be placed in such a position that there is no pull whatever upon them. A little ingenuity in the application of the splints may be required to effect this. The weakened limbs should be kept continuously warm, and suitable woolen clothing worn. It is doubtful if electricity does good in any stage in children; it irritates and freightens them, and has largely been given up. Massage, gentle in application, is of the greatest service, but the writer of this review is of opinion that much harm results from forcible and prolonged massage.

The Use of Silk Ligaments at the Ankle in Infantile Paralysis.—Robert W. Lovett (American Journal of Orthopedic Surgery January, 1915, p. 415) says that the use of silk ligaments to replace arthrodesis in complete infantile paralysis of the foot has been both advocated and condemned. It is a comparatively new operation, and, if successful, yields better results than arthrodesis, because the latter leaves behind it a stiff ankle joint; whilst, after successful operation by silk ligaments, plantar-flexion only is checked and dorsiflexion is allowed, making walking much easier. The rationale consists of the attachment of an artificial silk ligament around which fibrous tissue forms, making a new ligament. The silk is not put in as a ligament in itself, but it serves as a base for the deposit of fibrous tissue, and therefore a long after-treatment is obviously necessary.

The results of 79 operations at the Children's Hospital, Boston, the work of six operators, are given. The technique, however, varies among the operators. At first twisted silk was used, but this was followed occasionally by infection and extrusion of the silk. In 1910, however, braided silk Nos. 12 and 14, prepared in paraffin, was used. In 1913, Turner's silk No 11, boiled in oxy-cyanide of mercury for 30 minutes, and then boiled with the instruments for the minutes, was tried. Later on, twisted silk Nos. 16 and 18, boiled for 20 minutes in a 1 in 1,000 solution of bichloride of mercury, and then boiled again in water with the instruments, was employed.

Lovett says that the use of any one method of silk preparation is not responsible for the expulsion of the silk. He has shown that this latter event may occur with various methods. The writer of this review, however, has formed the opinion, from some experience of this matter, that the best way of preparing the silk, and of anticipating the possibility of its being extruded, is to use twisted silk of No. 3 or 4 of our gauge, which has first been soaked in ether, then boiled, and afterwards placed for a week in a 1 in 1,000 solution of biniodide of mercury. We have not had, so far, any case of infection or silk sinus formation. In two of Lovett's cases of implantation there was direct operative infection, and the silk had to be removed in one case in about three weeks and once in four weeks. The other cases, before they gave trouble in this direction, ran from three to five months, and in one example to 15 months. In this last case it seems fair to attribute the trouble to boot thouble, but in the others it occurred before the boot was put on.

Three different methods of implanting the silk have been used—

A. Periosteal Insertion.—An incision is made over the skin of the tibia the periosteum turned back, and the silk quilted up one side of the reflected periosteum and down the other, and two, four, or more strands are then carried down under the annular ligament by means of a long flat probe, with a large eye, to an incision made in the tarsus, where it is desired to attach the silk. Here it is again quilted into the periosteum. The incision may be at the inner or outer side of the foot or at the middle, the strands being opposite to the desired spot and fastened there.

B. The Open Bone Method.—The tibia is cut down upon and the periosteum deflected, then a bone drill, with an eye, is driven through the tibia from side to side. A similar hole is made in the tarsus, and the silk is then secured through the holes

C The Subcutaneous Bone Method.—In this method a drill, with an eye, is passed directly through the skin, without an incision, at the desired spot on the foot, and by means of a leader of silkworm gut the silk is carried through the drill-hole The tibia is then drilled in the same way, without an incision. and through the drill-hole, slightly enlarged if necessary, a probe, with an eye, is passed down and out through one of the drill-holes in the tarsus, the silk passed through it, and drawn back and out of the upper hole. The same procedure is repeated for the other drill-hole of the tarsus. The silk strands are then drawn through the hole in the tibia by a leader and the drill-hole where the strands emerged is enlarged sufficiently to allow a deep knot to be tied.

As to the choice of methods, Lovett prefers the open bone drill method, because the proportion of good results is greater by this than by the other two, and silk, implanted in the periosteum, often tears away. As to results, he classifies them as successful, when the desired result is obtained and the foot held at a right angle; partially successful, when the position was improved by operation, but there was some dropping of the foot; and as failures, when there is no perceptible improvement, although it is interesting to note that in no case was the condition made worse by it. Of 44 periosteal operations, where the result has been verified, 13 were successful, 9 partially so, and 22 failures. Of 17 bone drill operations, where the result was verified, 12 were successful, 2 partially so, and 3 were failures. Lovett's tables show a progressive improvement in results as the years pass by.

All the above have been done for paralytic talipes equinus; and Lovett, in addition, gives three cases of talipes calcaneus which have been operated upon by putting in a posterior silk ligament from the os calcis to the tibia. One of them was a complete failure; in the second, the calcaneus was improved, and in the third, although there was an abnormal amount of dorsiflexion, the foot was useful and much improved. In our own practice, we have had four very successful examples of moderate talipes calcaneus treated by this method, combined with shortening of the tendo Achillis.

It is often stated that while the leg grows, the silk does not, and that deformity follows as a result, but in no case of his series has Lovett seen any suggestion of this, nor has there been any evidence of over-correction in any way. The cases are kept recumbent for two or three weeks after the operation, and are kept quiet for two months or so; then they are put in plaster for from four to six months, and walking is restricted until a year after the operation. During this time, no unsupported weight should be put on the silk ligaments. In careless patients, it is desirable to fix the foot in plaster of Paris for a year. Lovett regards the implantation of silk ligaments as a useful operation, resulting in a good proportion of successes in paralytic feet. The most rigid technique is necessary, and prolonged fixation and support are essential, because the silk is not strong enough to hold up the foot of itself, but serves as a core of a ligament, which is the real supporting structure.

Albee's Bone-grafting Operation in Pott's Disease of the Spine.—Edwin W. Ryerson (American Journal of Orthopedic Surgery, October, 1914, p. 259) reports the results of a series of 26 cases operated upon by him, and considers that they will bear comparison with those under any other form of treatment yet devised, especially when it is remembered that the majority of these patients have been long and patiently treated by conservative orthopedic measures, and were operated upon as a last resort

The method has earned for itself a distinct place in the treatment of spinal tuberculosis, and can almost be classed as the acme of conservative treatment. As to technique, the operation should be done rapidly but not hastily, and a double-bladed electric saw is a necessity for the saving of time. The splitting of the spinous processes must be carefully done, and a narrow rather than a broad chisel should be used. No attempt should be made to split the shafts of the spinous processes in children, for they are too thin. The most that we can do is to split the tips, and strip off the periosteum along one side The muscles of the periosteum should not be separated on the opposite side of the spinous processes. Heavy braided silk sutures should be used. They should be boiled in perchloride of mercury and then in paraffin. These sutures should be strongly placed in the tissues or in the tips of the spinous processes themselves.

If it is desired to make any correction of the deformity, a point of great importance is to use a bone splint that will extend well above and below the diseases vertebrae. It is not too much for it to lie two or ever three vertebrae above and below the limits of the disease, and it is far better to extend a vertebra to many than one vertebra too few. Incidentally, we may remark that it has been shown by Albee that this method of ankylosing the spinous processes of the vertebrae does not interfere with growth, for the growth increases pari passu with that of the spine.

HEART DISEASE IN CHILDHOOD*

BY HENRY ENOS TULEY, M. D.

Professor of Pediatrics and Dean of the University of Louisville,
Medical Department

Louisville, Ky.

The frequency with which organic lesions of the heart have occurred in children under my observation of late has emphasized the importance of this subject and suggested a topic for presentation to this society, with the special hope that a full discussion may be provoked.

The etiology of endocardial lesions is very varied. It is apt to occur in any acute affection, wherever located; it is closely related to that vague, indefinite condition which we call rheumatism for want of a better name, and occurs as a complication in diseases of the tonsils, naso-pharynx, teeth and gums

Just here it may be well to emphasize the frequent absence of typical adult symptoms of rheumatism in a child. Severe endocardial lesions often develop in childhood in which there are but few or perhaps no recognizable rheumatic joint lesions, perhaps only a recurrent tonsillitis, yet a severe involvement of a valve may occur. Another phenomenon which it is important to bear in mind is the fact that a murmur may appear between visits, or per contra the murmur present at one examination may not be found at the next visit. This is an occurrence I have noted several times, and is one which I have known to be used by a consultant very much to the detriment and disadvantage of the attending physician. This is mentioned only to deprecate such unprofessional relations between consultant and attending. If he locate a murmur not previously found by the attending physician, the fact that it may have been present but a few hours should be borne in mind and so stated.

Systolic apical murmurs occur during any febrile disease, then disappear without leaving any evidence of organic lesions. It is in these cases, though, that we may expect severe myocardial changes and they call for longer confinement to bed than is usually the case.

The location of the lesion may be a diagnostic point as to the time of the involvement; for instance, right side lesions in infancy and childhood indicate a fetal endocarditis of septic or rheumatic origin.

---

*Read before the Medico-Chirurgical Society, April 23, 1915.

Radiography in diagnosis of heart lesions, especially congenital displacements, should be considered and made use of. Keinbock[1] considers the placement of the tube as of importance, suggesting 50cm. from focus to plate in small children, and 60 to 80 cm. in larger children. The X-ray is considered of value in diagnosis of dilatation of the pulmonary artery, of aneurism of the aorta and pulmonary artery, and of pulmonary stenosis

An extended study of congenital cardiac disease is reported by Dunn[2], of Boston. He lays down the following rules for differential diagnosis: (1) A case showing cyanosis with enlargement of the cardiac, dullness or palpable thrill, or both, is one of pulmonary stenosis. If the baby dies shortly after birth, the most probable lesion is pulmonary stenosis alone. If the baby survives early infancy, or lives on into childhood, the pulmonary stenosis is probably associated with some other lesion. If the murmur is notably transmitted into the vessels of the neck, or if a "humming top" murmur is present, the additional lesion is probably open ductus arteriosus. If the murmur has neither of these characteristics, the complicating lesion is probably defective interventricular septum. (2) A case showing a murmur and enlargement, without cyanosis, is probably defective interventricular septum. If the murmur is not transmitted into the vessels of the neck, this lesion exists alone. If the murmur is so transmitted, or if the "humming top" murmur is present, the lesion is probably combined with open ductus arteriosus. (3) A case showing murmur without either cyanosis or enlargement, especially if the murmur is markedly transmitted into the vessels of the neck, or if it extends into diastole, is probably one of open ductus alone. If the murmur is of the "humming top" variety, extending throughout the cardiac cycle, the diagnosis of this lesion is almost certain.

I have seen but two children which could be classed as typical blue babies, both dying before six months old. In both of these there were the typical symptoms of patent foramen ovale, continued cyanosis, worse on crying or exertion, and the clubbed fingers.

---

[1] Pfanndler—Diseases of Children.

[2] Ibid. September, 1914.

It should be borne in mind that a rheumatic infection of the heart may not be limited to the endocardium. Myocardial inflammation due to rheumatic infection may show in the form of nodules (Aschoff bodies), and when located in the interventricular septum close to or involving the bundle of His, may be the cause of interference with ventricular contraction.

The effect of rheumatic or any septic infection on the heart muscle is too frequently overlooked. The heart muscle is very regularly affected, even though the endocardium or pericardium are not, and the heart muscle should always be very carefully watched in infections of all kinds. This is especially true in rheumatic infection. Our usual thought in regard to the rheumatic heart lesion is that it must be an endocarditis when in point of fact the heart muscle is quite as regularly if not more often, affected.

Primary pericarditis is quite infrequent in children from the second to seventh years of age. Among the causes given are infections of any kind, the exanthemata, erysipelas, nephritis, inflammatory conditions of the abdomen, pneumonia and tuberculosis

I have recently had under observation in the children's ward of the City Hospital a case of pericarditis with effusion, later complicated with an endocarditis permanently involving the mitral orifice. This child was seven years of age, and the only history obtainable was of several attacks of subacute rheumatism and recurrent tonsilitis. There was complete absorption of the pericardial effusion and no evidence of pericardial inflammation or adhesions, though the mitral regurgitant murmur remains.

Rheumatism in a child is essentially a chronic condition, or at least a condition in which there are frequent and more or less severe flareups. Every case of rheumatism, especially those involving the heart, should be watched closely as to whether there is an irregular temperature, which, if present, is indicative of an endocardial involvement.

Palpitation, syncope, cyanosis and pain or distress over the region of the heart are present in a myocarditis, and these symptoms when associated comprise a danger signal which should be carefully taken into account. Per contra, it might be mentioned that but few subjective symptoms may be noted in severe endocardial involvement.

A possible cause of heart disease in childhood is too much and too violent exercise. Competitive games, long runs, and violent exercise in any form in the young may result in serious harm. Too sedentary a life may also result seriously. An endeavor should be made to strike the happy medium.

The question of blood pressure in childhood and its utility as a clinical aid has been discussed by various authors, with the general opinion prevailing that it is of no very great value in a child, from any standpoint, especially when five years of age and under.

Wolfensohn-Kriss (Archives f. Kinder) made observations on the blood pressure in 350 children, from a few weeks old to fourteen years, and gives the variations as between 80 and 113 mm of mercury. He concludes that blood pressure in children increases in direct proportion to age, size and weight; that age alone exerts no influence, laying stress on weight and size; that sex exerts no influence, provided weight and age are the same.

Hoobler (American Journal Diseases of Children, 1912) has devised a method whereby the systolic and diastolic pressures can be visibly and automatically recorded, the instrument being called the plethysmograph.

Pisek and Coffen (American Journal Diseases of Children, 1912) look with favor on the use of the polygraph in the study of heart cases in childhood, claiming that it enhances the value of careful physical examination, and demonstrated that satisfactory tracing for diagnosis can be made for children.

The prognosis of heart diseases in children is entirely an individual problem, though there are enough cases on record which have been a long time under observation to establish in a general way an idea of what may be expected in these cases. Dunn for instance, as a result of a study of 300 cases in Boston Children's Hospital (American Journal Diseases of Children, 1913), states the immediate mortality of rheumatic cardiac disease is 20 per cent; subsequent mortality of patients subject of rheumatic endocarditis, followed for at least ten years is 60 per cent, and the mortality after young adult life about 7 per cent.

The cause of death may be due directly to the heart infection, especially when the myocardium is chiefly involved; to ruptured compensation, this occurring more often in young adult life; to an acute infection taking place in a child in which compensation has been temporarily established, or to a secondary pulmonary or kidney affection. A child subject to frequent rheumatic reinfection is very apt to have a poor chance for reaching even young adult age. But one who had an endocarditis in early infancy with a permanent lesion following and reaches puberty without ruptured compensation, may live for a number of years without any evidence of a serious heart lesion existing. This is unquestionably due to the perfect adaptation of the child to the crippled organ and vice versa, resulting in a perfectly balanced compensation.

During 1913 and the early part of 1914 I had under my care a girl of thirteen whom I had been seeing more or less frequently for about five years. She was to a superficial observer a strong robust, rather obese child, with anemic tendency, which was apparent to anyone. Her history was interesting At three years she had had a pneumonia and empyema the latter necessitating a rib resection. She had been a delicate baby with much feeding difficulty. I was called first to attend her in an attack of typhoid fever, which was quite severe complicated by a pneumonia and an endocarditis, involving the mitral valve. Leaving for Europe about this time, I left her in charge of Dr. Sidney J. Meyers during the acute pneumonia, endocarditis and subsequent convalescence. Her convalescence was slow, but steady and satisfactory. She had rather frequent attacks of tonsillitis, which, while never very severe unquestionably added to her disability. Tonsillectomy was frequently mentioned, but never accepted as necessary.

About six months before her death she had a severe tonsillitis, followed by a lobar pneumonia, and a recurrence of the endocardial murmur, which had previously entirely disappeared Her condition during this time was extremely critical, ruptured compensation frequently threatened but never occurring. About this time she was taken to Chicago to consult Dr Robert H Babcock, who at once strongly recommended tonsillectomy under ether anesthesia. After a few days' rest this was done, the child suffering no shock and apparently none the worse for this ordeal. She apparently improved after this returned home and later went to Florida. About this time the family adopted Christian Science, later taking the child to New York, abandoning medical care. In a short time she became water-logged, great edema of the extremities developed spontaneous rupture of skin in many places occurred, and she died rather suddenly, probably of pulmonary edema.

I briefly refer to this case to remind you of the importance of age of the child as a factor influencing the prognosis in a case of heart disease. The age of puberty seems to exert a special tax upon children the subject of endocardial inflammation but if they survive this period they may live with perfect compensation for many years. They may even survive severe infections, such as pneumonia, but the presence of an endocardial inflammation associated with it, renders the prognosis extremely grave. Hence, it behooves us to be most careful in the expression of an opinion as to the possible outcome in an endocardial inflammation when observed in children under twelve years of age. To tell the parents the child will probably outgrow the condition is cruel and untrue, for it lulls them to a false sense of security, and the child is allowed to do many things which if not indulged in might add many days to its life. It is a fact however, the earlier the endocarditis occurs the better the prognosis, as it has a much longer period to develop compensation before a serious strain is put upon it. As Crandall puts it, the heart and the child grow up together and are more apt to adapt themselves to each other than they do in later years.

There is one phase of the subject of heart disease in childhood upon which I have been unable to reach a satisfactory conclusion. I refer to the so-called functional troubles, irregularity and intermittency of the heart. I have under observation now a boy of thirteen, without valvular lesion or a demonstrable myocardial disease, who persistently has an intermittent pulse, frequently being very regular in the intermittency, losing every fourth beat. This is the same by auscultation as by palpating the pulse. He has no more respiratory difficulty on exertion than the normal boy, though there may be slightly more frequent pulse. Acting on the hypothesis that it was likely due to an intestinal condition, I have had him on all kinds of diet, so-called intestinal antiseptics and digestants, but without effect.

In such a case as this—and they are by no means infrequent—what is the prognosis and what general routine of treatment best adapted?

Zahorsky[3] reports two interesting heart cases in infants. The first fifteen months old, presented typical symptoms of heart block. The pulse rate was 54 and a loud systolic murmur was heard over the entire chest. Over a period of one year there were several attacks of fainting and cyanosis, with a continued slow pulse.

The second case was one of paroxysmal tachycardia, in a child of three, with a pulse of 200; the reporter seeing the child in several attacks of the same nature. He refers to one other case reported by Robert Hutchison[4] in a child a little under three years of age.

In this connection, it is of interest to note that Pfanndler and Schlossman in their text book state that "very rapid pulse (pulses celer) does not occur in childhood.

As to the treatment of heart disease of childhood, no hard and fast rules can be laid down. Many factors must be considered The etiology must be carefully weighed and cause removed when possible. Bearing in mind that an infection is responsible, either active or latent, its source must be found.

The role which the tonsils play in the etiology of the recurrent rheumatic type of the infection is most important, and if they are diseased they should be removed. I am not an advocate of the universal slaughter of the tonsils, but believe most emphatically that in the presence of a rheumatic endocarditis the tonsils should be removed if the least enlarged. I have under observation at present in the children's ward of the City Hospital two boys, ten and twelve years old, the subjects of chorea, both with an endocardial murmur and both with tonsillitis, and history of recurrent attacks. Such cases as these should be given the benefit of the doubt, at least, and have the throat thoroughly cleaned out.

In the care of these cases, one indication stands out most prominently namely, rest in bed; rest not only during the acute febrile stage of the attack, but for a prolonged period. It might be safest to arbitrarily put this period of rest at six weeks, perhaps longer, but certainly no shorter period. At the conclusion of this period massage and passive motion are effectual as a preliminary to moderate exercise on first getting out of bed The frequency and regularity of the pulse are guides as to the amount of exercise permissible following the bed treatment

---

[3] Interstate Medical Journal, January, 1915.

[4] British Journal Diseases of Children, January, 1914.

Anemia in these patients is one of the most serious complications to combat, because of its influence on general metabolism as well as upon the heart muscle itself. Tea and coffee. sweets alcohol and tobacco should be prohibited in chronic heart cases

The bearing which buccal infections may have on these cases is important to be borne in mind. Serious forms of Rigg's disease are a constant source of danger. The beneficial effect of emetine on this condition is a very great discovery and should be given a trial.

During the acute febrile stage, with the patient entirely recumbent the application of the ice bag is most beneficial. It is usually very well borne, and can be kept on a half-hour and off the same. In pericarditis it is beneficial in relieving dyspnea and pain.

A word might be said here against the indiscriminate and routine administration of strychnia in heart and other conditions Cabot. in five thousand observations, in thirty-one cases of typhoid fever, four of pneumonia, and 150 other cases, was unable to prove that strychnia had any influence on blood pressure in febrile cases. He holds there is no reason for prescribing it as an aid to a failing myocardium. Newburgh (Archives Internal Medicine. March. 1915) also states there is no logical basis for use of strychnia as a cardiovascular stimulant as it does not increase the output from the heart, slow the pulse or raise the blood pressure.

The administration of some of the salicylic preparations to children the subject of point pains, no matter how vague. is to be commended. The occurrence of so-called ''growing pains'' should always be taken seriously, and the child watched for other rheumatic manifestations, and the salicylates given as soon as the diagnosis is clear.

Children respond most readily to digitalis and strophanthus in moderately small doses. However, the administration of ether should be reserved until the first sign of failing or ruptured compensation is noted. Too much cannot be said against the indiscriminate administration of digitalis.

The importance of attention to the diet, digestion and condition of the bowels should be emphasized. A distended abdomen with much gas is a great detriment in endocardial or myocardial trouble.

PROPHYLAXIS IN PEDIATRICS. INSTITUTIONAL*

BY HARRY R. CARROLL, A.M., M.D.
Cincinnati

There is ingrained in the nature of every one of us something of the pathologist—something of the investigator. From the pride of the nursery who is disappointed at the sawdust content of his doll to the senile plutocrat who creates institutions to peer into conditions for him we find a constant manifestation of this trait in human nature. In the case of the physician it shows itself in his constant attempt at analysis of the matters observed in his daily practice; the seeking of the cause, the examination of conditions present, and the conjecture at the prognosis. He performs these acts almost subconsciously and seldom realizes that in his profession more than in any other class is there present this habit analytical. This is part of my apology for presenting this paper on pediatrics this evening I confess that in the past I have felt as if I had received an intravenous solution of serum derived from that mythical insect, the investigatorial bee—on occasions when I was in a position to observe the usual manner of handling the diseases of children. At the time I thought I noted certain basic errors in their prophylaxis in institutions. I considered the idea original; I have since discovered the mistake. But let me present my findings on a figurative autopsy of the conditions then and since observed in the institutions it has been my privilege to visit.

The specialty of pediatrics is comparatively a recent departure from the old custom of treating the sick children. You all appreciate the conditions and the causes leading to its institution. After the pioneers in this work had hewed their way through the usual objections raised, we had a children's ward for children's diseases. The young patients at this time were placed in one ward and later admitted cases subsequently sent likewise. As a general rule all cases, excluding those of a recognized contagious nature, were here gathered; the surgical, the skin, the neurologic, the orthopedic, and each of these general classes of cases treated by the general staff doctor who was specialized in that line of work—with but one exception, the medical cases. The same condition is, in the majority of our hospitals, still present. As the visiting physician walks through a children's ward, what is the usual picture that is seen? At one end of the ward, perhaps, are grouped the surgical cases, the fractures and what not. In the cot nearby perhaps there is a mastoid draining. Next come the cases of a purely medical or pediatric nature, with the cases of enteritis in summer and bronchitis and pneumonia in winter as the most common types. And like the poor always present there are the rachitic, the marasmic and the patients suffering from the food injuries. In the group of beds of the neurologic service are found the usual percentage of chorea cases. If there is an open-air pavilion or even a large porch attached to the ward there are found the orthopedic, especially those of a tuberculous etilogy, with the usual number of draining sinuses. And to make the description brief, mingling among and playing with them when convalescent are present the cases of tinea, impetigo, and the other products of an overpopulated neighborhood. They all have their toys when able to use them; and from the manner in which they escape destruction at the hands of succeeding ward-fulls of children speaks well for the construction. At first sight the view and the conclusions are favorable. The physician leaves the ward with the sense of having seen a duty toward the young ones well performed. But the most beautiful tropical mass of jungle is the worst place for a human habitation—or, as the classics express it, "things are not what they seem."

---

*Read before the University Medical Society, March 31. 1915.

After he has left the ward, there is impressed on his judgment the fact that there are two points in common in all the cases seen—that as far as the age is concerned they are all of a pediatric nature and, secondly, that their physical resistance to disease in every case has been lessened to a greater or a lesser degree I consider the latter the more valuable impression derived. Perhaps if he allows himself to dwell longer on the subject, he does a little mental arithmetic, a little old-fashioned addition. The problem presented is this: Lessened physical resistance plus bacteria plus a means of transmission plus proximity equals what? The training of his sophomore days would lead him to believe that there was a mighty good chance of a cross infection occurring. But he dismisses the thought with the mental notation that few such cases ever arise and to consider it seriously would be to make a cemetery out of a dead bacillus, a mountain out of a molehill. And he goes along his self-satisfied way.

The attendants of the ward might tell a different story. It is the fact that so few cases anywhere in our scheme of things that are exposed to disease contract them that is the salvation of these patients living in these surroundings. I still refer to the ward as a whole and do not attempt as yet to classify the causes of disease here present or to enumerate the means of transmission. I consider the doctor who, if he has had any training along these lines in hospital work, a rare exception who has not seen an entire ward for children under quarantine who has not seen its occupants moved to other quarters while their own were being fumigated for other cases. If I mistake not, I have, in my limited experience on such a service, seen my entire service transferred to three different wards in two months' time. It was a case of constantly being on the alert and watching for the end results to appear, rather than an attempt to obviate the cause. But let me state at this point, gentlemen, that these wholesale examples are apt to occur, as a general rule, in the wards of a general hospital, a hospital for the poor especially. The private hospital, where the cases are picked—as the medical vernacular expresses it—are more liable to escape; for wards, as we generally understand the term, are here the exception rather than the rule. The mortality tables of the ward register tell a very pointed tale In spite of the boasted claims of improved methods, most modern food mixtures, and caloric determination of the individual case needs, the mortality rate remains too high. By every known rule patients that should get along nicely, pick up in weight, at the onset of an unsuspected cross infection lose all they have gained, and only too frequently succumb either to the primary or the secondary infection. And the hospital is blamed; for the people realize that at home, under anything like proper conditions, the results are much better.

Why then, under conditions where the every need of the physician can be satisfied, where there are the services of trained nurses constantly at hand, do these conditions occur? Let us perform a figurative autopsy on the subject and see what are the causes at fault. We will not attempt to enumerate the diseases generally found on the pediatric service. They are self-apparent to any one who has ever been called upon to order a Finklestein's mixture. But it might be well to mention the specific causes present which lead to cross infection—the bacteria that are most commonly at work. Then we might touch upon the means of transmission, the results thereof and thus lead up to the subject of their prophylaxis. At the very onset of the task, gentlemen, we find ourselves powerless. What causes mumps, measles, pertussis, scarlet fever? A close perusal of Osler gives an idea, but doesn't become specific in its information. But this we do appreciate: In this category there are found three-fourths of the usual sources of infection in instutional wards. But to continue: From the surgical cases there are contributed the streptococcus pyogenes, aureus, and albus. The staphylococci less frequently. From the orthopedic the mose common factor present is the bacillus tuberculosis; from the specialties, the gonococcus and streptococci. And from the medical types what a galaxy shine forth, the bacillus of Shiga, of typhoid, of Friedlander, of tuberculosis, of diphtheria; the diplococcus of pneumonia, of gonorrhea, of cerebro-spinal meningitis. And acting co-ordinately, from all the services, there come the danger of smallpox, the acute examthemata, the acarus scabiei, the trichocphyton and the many skin conditions whose cause is unknown. I do not state for a minute, gentlemen, that they are readily recognizable; they manifest their presence only too strongly when, as Dr. Forchheimer used to express it, "the proper time comes." Why go further in the list? The very naming of these immediate causes cause you to remember those that I might have forgotten

Regarding the means of the transmission, the only proper and complete list can be secured by glancing at the official inventory of the wards' furnishings. The bed, the bed pans, the instruments, the hands of the doctors, the internes and the nurses the toys—all in turn are at fault. Never before have I realized what an apt word is "fomites;" for it expresses the idea exactly. But in few instances is the application of what we know concerning prophylaxis carried out—the sterilization of the bottles and nipples in the cases of food injury, etc., and the dressings of the surgical conditions being the main examples. Take, for example, the bath tubs—does a superficial aqueous washing thereof by the nurse, after cleansing an enteritis patient, remove the chance of infection before its hydrotherapeutic effect is made on the pneumonia case that follows it? Changing of the diapers in a ward of thirty or forty children without a proper cleansing of the hands between each performance can not be said to be following out even a basic rule of prevention. And what are the results? Why should we wonder when varicella claims a third of the cases, for example. in a ward where such conditions prevail? Now, chickenpox as a rule generally subsides nicely under treatment when uncomplicated, but add the burden to a case already none too strong from an intestinal condition and there appears an entirely different phase in the trouble. Just for example: In one ward where part of my service had been moved, I observed six cases of gastro-enteritis, cross infected by varicella, which had previously been doing well, succumb to the added burden. Even remove the occasional death from the records, consider the time the nursing and the cost of treating cases whose recovery is delayed from such causes.

Let us give credit where credit is due. An immense amount of work of quiet constant investigation is being done on every pediatric ward to determine the first visible sign of such conditions. But when the disease does manifest itself what can be done? The damage has been accomplished. In the exanthemata the case is removed to an isolated spot, the ward is placed under quarantine and it becomes a case of waiting and trusting to luck that the others do not show similar involvement. But what of the less spectacular and the diseases who do not herald their arrival with a general eruption? Tuberculosis is seldom suspected and the skin conditions are well advanced when the nurse discovers them as she gives the patient his bath. In brief, what can be done in the way of prophylaxis?

At this point we find ourselves clinging to one of the basic principles of the German school of medicine—"make the diagnosis, arrive at the cause and the treatment is self-apparent." Owing to the scarcity of nurses, the great number of patients, it is generally said that the ward—one large unit—is absolutely necessary. That it is more convenient is granted but the necessity is in doubt. A greater degree of prophylaxis, besides quiet. is secured by the ideal system of a ward composed of units each containing between five and eight patients. Architecture enters largely into the scheme of prevention. In such an arrangement where each unit is independent, if the occasion arises, of its neighbor, the only things in common under ordinary conditions are those utinsils which are able to be sterilized before and after using. A common hall acts as a connecting link between the units. This allows of the grouping of the patients under almost any system chosen; for example, similar cases on one type of service in one or more units, or a temporary observation during a period greater than the ordinary time of incubation, or the age of the cases, or the sex thereof. Regarding the cases of tuberculosis in the orthopedic service being kept in the wards of a general hospital when sanitarium treatment is at their disposal, I do not think that it is justifiable. Under the above arrangements in the buildings there need be no increase in the number of nurses or attendants. When infection does occur, if these precautions have been followed out. if the every-day precautions that are observed in surgical treatment have been observed, all that is necessary is to isolate one unit, place the necessary number of nurses under the same quarantine and the condition is controlled. The entire health of the ward has not been exposed, the integrity of its previous condition is not destroyed. It is simply the application in hospital architecture of a principle that has been in practice for an analogous reason in marine construction for many years—the theory of the water- and fireproof compartment of the liner applied to the prevention of contagion in ward construction. If you think this too theoretical, remember, gentlemen, that the ship not so protected pays a prohibitive insurance rate, just as the large ward pays in an increased death rate.

Regarding the common utensils, instruments and the like, if each unit has its own set thereof and it is seen to that they are not removed, a methodical fumigation or sterilization at regular intervals would reduce to a minimum their power as an agent in transmission. If, on the other hand, the same are used as interchangeable between these sections, a thorough cleansing between each occasion they are in use will likewise control the situation. To go a step further: Where the general, large ward can not be dispensed with, cleanliness, medical cleanliness, as every physician understands the term, rigorously and systematically observed will produce the results desired Sterilization, by the method or the solution indicated, in each case, of every article used on different patients—of the hands of the attendants—in brief, the same consideration as regards cleanliness in the entire ward and its contents, as is observed in regard to the feeding bottles, will reduce the chance of infection proportionately to the degree to which it can be observed.

In conclusion, gentlemen, I do not wish to be considered as criticizing aimlessly the work of those who are at present engaged in the hard task of treating children's diseases. These are simply a series of observations, noted in a brief experience, and the more pointed your criticism thereon the more favorably will they be received. Errando, docimus.

SOCIETY TRANSACTIONS

AMERICAN PEDIATRIC SOCIETY

Twenty-seventh Annual Meeting

Lakewood, N. J., May 24-26, 1915

A Contribution to Ductless-Gland Therapy.—Dr. Royal S. Haynes, New York City: The conclusion that one is justified in drawing from my case is that in cases of cretinism it is wise to investigate the condition of the pituitary. The striking thing in the therapy is the fact that symptoms that might have been due to hypothyroidism cleared up under the administration of pituitary capsules. There was a striking change in the contour of the hands, ankles, hips, buttocks, thighs and shoulders that could be made to appear or recede by giving or taking away pituitary gland therapy. The effect produced on the child's disposition was also striking. Pars intermedia therapy likewise seems to have done something. We have come only part of the way in this individual case, and these conclusions are merely preliminary.

Dr Herrman: What Dr. Haynes has said bears out the contention that very frequently more than one gland is affected. That observation was made many years ago, and there is no question that there is a correlation between certain ductless glands I have been using a tablet containing extracts of the three glands, the thyroid, the suprarenal and the pituitary; and in some cases I have obtained better results than when thyroid treatment alone was used.

Regarding the relation between cretinism and the pituitary, I would mention that in a case that I have had under observation for years, I have frequently seen marked disturbances of the nature of acromegaly.

As to the treatment of cretinism itself, I formerly employed only thyroid extract; but lately I have been using thyroprotein, with better results—or at least as good results as formerly

Dr. Griffith: I wish to say that I have had under observation during this past winter a child, if I may call him so, who has been a tremendous puzzle to me. I have been impressed with our lack of knowledge of the mutual relationship of different internal secretions. Here is a boy almost a giant for his age but his is apparently a case of Froelich's syndrome, in which we have a hyperactivity of the thyroid (?). It must be something more than pituitary disease that affects this boy; but so far as the X-ray and sugar-tolerance are concerned, it would be a case of Froelick's syndrome. His voice is that of a much older boy, and he looks like an adult. It is giantism and Froelich's syndrome combined; and how can we have such a thing unless both glands are involved in the disease?

Dr. Haynes, closing: I wish to say that the association of thyroid and pituitary has some experimental basis, in that the removal of thyroid has been noted to cause hypoplasia of the anterior lobe of the pituitary. Dr. Cushing has reported cases similar to this, in which there was overgrowth with hypopituitarism in the American Journal of the Medical Sciences.

Energy Metabolism of an Infant with Congenital Absence of the Cerebral Hemispheres.—Dr. Fritz B. Talbot, Boston, Mass.: The investigation showed that this child used up twenty-nine calories per kilo, as compared with fifty-nine in the normal child. The metabolism in this unique case cannot be compared to that of a hibernating animal, because the temperature was not decreased. The temperature in the ward where the child was kept remained normal. The probable explanation of the very low metabolism is that there was such a small proportion of musculature that it was not necessary for him to make heat in order to keep him warm, because he lived such a very quiet life.

Dr Howland: Four years ago, I reported the results in some metabolism studies on a child that were comparable to these This child studied by Dr. Talbot was eight months of age, while the one I studied was eight years old. As the result of an old cerebrospinal meningitis, which had left her with contracted extremeties, she was ankylosed. As she had sufficient muscles, she could not make enough heat. Her weight was almost entirely in the parenchymatous organs and in her skeleton. In the case that Dr. Talbot has used in making metabolism experiments the weight was due almost entirely to fat. One would expect to have nearly comparable results in these two cases, so far as heat is concerned. There must be functionating tissue to produce heat.

Dr Tileston: I was interested clinically in this case, and I should like to ask what epileptiform convulsions were observed in this infant. In a case I saw, these were the main features with chronic spasticity of the limbs, and attacks of apnea or increased respiration and tachycardia. I should like t hear a more detailed description of the clinical aspect of the case of Dr. Talbot.

Dr. Talbot, closing: Unfortunately, the clinical history could not be obtained in any detail. So far as our knowledge of the baby goes, there were no changes in the respiration, and no nervous symptoms of any sort, other than what was noticed in the ward. There was a cry simulating laryngismus stridulus. Dr. Howland's case is a very interesting one. I have one other to report, in a child three years of age, who was a very lethargic cretin and had not been treated at all.

Report of Various Types of Idiosyncrasy to Milk.—(Dr. E W Saunders and T. Wistar White, St. Louis, Mo).—Dr. E. W Saunders. St. Louis, Mo.: No doubt, most of our cases will be explicable after the solution of the vexed problems relating to the effect of the various constituents of milk, but we think that our case in which there was vertigo on the administration of the least amount of dried milk put into bakers' bread must certainly be classified as an idiosyncrasy. The exclusively breast fed child had a family history pointing to idiosyncrasy We would urge individualization in the dietic treatment of infants. In critical cases, one should resort to cereal food in spite of the fear of chronic dystrophy.

Allergy to Common Foods.—Dr. Oscar M. Schloss, New York City: A number of cases of sczema and bronchial asthma prove to be due to food allergy. A satisfactory result can be obtained in some of these cases, but not in all; because there is a lack of proper substitute foods, and it is difficult to secure the reaction in all cases. It seems probable that further experiments will remove these obstacles. The guinea-pigs used in these experiments were divided into two groups, to one of which egg was fed. After thirty-five days they were found anaphylactic. Of the others, which were fed on egg for several months, none had developed immunity. The treatment should consist either in the administration of gradually increasing amounts of the toxic protein, or in eliminating the offending protein from the diet.

Dr. Howland: The reaction that patients with eczema show to the various proteids has lately excited much attention Within the last few months, Dr. Blackfan has been making cutaneous and subcutaneous tests of 23 cases of this condition All are sensitive to one or more proteins—almost all, to egg, and most of them to cow's milk; one or two to breast milk, and two or three to serum. These children have not shown any gastro-intestinal symptoms. Almost all are sensitive to more than a single food substance.

Dr Blackfan's experience has been almost exactly like that of Dr. Schloss. The intracutaneous test was more sensative than the cutaneous, but more difficult to interpret. It is often impossible to say whether it is positive or negative. So far as he has been able to make out, this differs somewhat from anaphylactic shock. It has been impossible to produce passive sensitization in animals, and it has been impossible to obtain precipitins from the blood. The children are sensitive to so many proteins that it is hard to give them a food upon which they can be nourished. All, when put on diminished food, responded rapidly: but within four or five days to a week afterwards, the infants showed a return of their symptoms. The older children, one or two of them showing marked symptoms, were entirely cured as soon as the offending protein was removed. One child who was sensitive to beef protein was fed on a mixture of cereal, washed butter, scraped meat and dextromaltose. He gained and, in the first four or five days, improved so much that the eczema was absent: but within a week it returned and is now as bad as before. Therapeutically, there is a small number of cases that can be improved, but a large number that cannot be improved in any way.

Dr. Talbot: I have followed Dr. Schloss' work with a great deal of interest, ever since I heard his first paper, three years ago. Following his suggestions, I have tried his method in cases of eczema, with the same result that he has obtained. The longest absolute cure that I have had is three years. I have six or seven children who have lost their skin test to the offending protein and are cured, within periods extending from three months to the three-years case. I have been fortunate in seeing a large number of cases of asthma recently, and in about sixty per cent of them, I have found a positive skin test to some food. In the majority of others I have not found any cause for the asthma, probably because I have not tried enough of the possible proteins. In the ones with a positive skin test, egg is the most common offending article. With egg, in the majority of my cases, there has been a positive reaction to nuts; and the English walnut has been the most common of these nuts to produce the reaction. In several instances, I tested six different kinds of nuts, and my experience, so far, has been that the peanut is the only one that did not react when the other nuts did. Many of these cases that are sensitive to eggs are also sensitive to horse serum. I have recently seen a case that was sensitive to horse serum, to an alcoholic extract of the scrapings of the meat of two horses, to five different kinds of nuts, to beef juice and to milk; but negative to egg. I had the same experience that Dr. Schloss had in a case with a positive reaction to hen's eggs, and also to turkey and duck eggs. In the majority of my cases, there has been a definite history of inheritance, either on the father's or the mother's side, or on both.

In all but two out of thirty odd cases of asthma, that I have been able to study carefully, the patients also had eczema. The results are very striking, when one is able to immunize a child to the offending protein. Unfortunately, there are certain cases that seem to be so sensitive that it is impossible to work up the tolerance of the child to that protein. For instance, one child that I have been treating now for fourteen months, I have worked up to ten milligrams of an egg a day, but I have been unable to work him up any higher, because each time he goes higher, it brings on an attack of asthma which puts him back a week or ten days. In most of the other instances, after the amount of egg that has been given has reached as high as about fifty to seventy-five milligrams a day, there is a definite improvement in the appearance of the child and a diminution in the duration and the severity of the attacks; and the children change their lives and habits from those of an invalid to those of a normal child. I think that Dr. Schloss deserves great credit for his work, because it is going to explain many conditions that we were unable to do anything for before he started his investigations.

Dr. Morse: I should like to ask Dr. Schloss and Dr. Talbot whether they think that all cases of asthma and eczema are due to food allergy, and if not, whether there are any other causes for these cases.

Dr. Tileston: I think that the researches of Dr. Schloss promise to throw a flood of light over conditions that have resisted treatment, particularly skin diseases. There are a number of skin conditions that have not been thoroughly understood; and some are going to be shown to be due to anaphylaxis. The common condition of aphthae stomatitis is due, in some patients, to eating walnuts; and it is probable that most cases may be due to some form of protein sensitization.

Dr. Hoobler: I should like to ask Dr. Schloss in what proportion of infants he finds this reaction, and whether he has carried on a long series of tests in practically normal children, and has found what proportion of them react.

Dr. Hamill: In attacking this problem from an entirely different standpoint from that of Dr. Schloss, I have given the test, using various proteins, routinely. I first started out with cases having definite manifestations of anaphylactic phenomena; but feeling that it was possible that manifestations might exist that were not generally recognized, I applied these tests routinely, and attempted to work backward and try to discover previous evidence of anaphylaxis in the cases that reacted positively.

I have not yet got far enough along in the work to reach definite conclusions but I have been impressed with the number of cases in which I have obtained positive reactions in children with no very definite manifestations of anaphylaxis, but who had been in ill health for long periods of time, chiefly with manifestations in the gastro-intestinal tract, such as recurrent attacks of diarrhea or vomiting. The number of proteins to which some of these children reacted was very striking. I have used in children, depending on their ages, the proteins of egg-albumin, cow's milk, beef, button and fish. I have in my ward at the present time, a case of asthma that has reacted to all these proteins. Reaction to egg-albumin was the most striking, and its withdrawal had a definite effect on the frequency of the test. The child had had attacks every day for the past twenty months. The egg albumin was then withdrawn, and the attacks ceased entirely for ten days, but then recurred. I then applied the other tests. Finding the reaction to cow's casein was then the most striking I withdrew the milk, and the child improved.

It has always seemed to me that any toxic substance must manifest itself in individuals in a mild degree, and in a degree that we do not recognize, because we do not find the phenomena by which these cases are ordinarily recognized. It was with the thought of the value of seeing whether, working backward to the history of the case, one might find evidence throwing light on some of the indefinite conditions of ill-health in childhood that we frequently recognize and for which we are able to do little, that these studies were undertaken.

Dr Haynes: I have had the opportunity of treating several cases of asthma in which the child was sensitive to egg, and in which it was necessary to limit considerably the amount of chicken that the child took, as well as the egg. I have noticed that the rules of diet prescribed would sometimes be transgressed, the child getting a little egg or a little meat, and that while in such cases it might not actually develop asthma, it would do one of two other things: Either the eczema would return, or the child would develop a night cough. The eczema would return with a slighter indiscretion in diet than was necessary in order to bring on asthma.

Dr. Herrman: My experience is somewhat similar to that of Dr. Haynes. I intended to ask whether this occurred with all eggs or whether Dr. Schloss has discriminated between certain types of eggs; whether it is a constant food allergy caused by the egg protein. I should also like the doctor to tell us how he applied these cutaneous tests. In a case of milk allergy, I tried the cutaneous reaction, and found that it answered very well indeed, but I should like to know how he applies the reaction noted with other substances.

Dr. Freeman: I think that many children have been injured by the assumption that they have an idiosyncrasy against cow's milk. Milk was not given to these children, because from babyhood they had been supposed to have been upset by it. I have never known of any child to whom I could not give milk, if I began with a small enough amount and gradually increased this to a normal amount. They would all do better, if milk were given.

Dr. Porter: I should like to ask Dr. Schloss to tell the means by which the children become sensitized originally.

Dr. Cowie: I want to compliment Dr. Schloss on his beautiful piece of work. One of the most important points brought out by him explains a failure that I had in carrying this test out over a period of thirty-five days, on one occasion.

Dr. Griffith: It is a question what these things are to be attributed to, whether other articles of diet than proteins may not have the same effect. It is reasonable to think that they may be produced by other things. In some cases a mere change of sugar will stop a convulsion.

Dr. Abt: While these foods are ingested, or taken care of, badly, or receive a toxic response from the organism in some children, a large number of other children will take them without this reaction. It has occurred to me, therefore, to ask whether the abnormality is in the food or on the part of the child. If the latter, have we any means of classifying the idiosyncrasies on the part of the children?

Dr. Schloss, closing: I was much interested in the fact that Dr. Howland has obtained comparable results to those that I got.

As to passive sensitization for asthma, I have tried a number of cases with negative results.

I have tried to passively sensitize animals to proteins.

With patients suspected of some idiosyncrasy, in only pronounced instances, in which the child had very strong disturbances, were the cases comparable to anaphylactic shock in animals. It is only in these that passive sensitization tests are positive Even in animals actively sensitized, the blood of these animals has not always the power to produce passive sensitization of other animals. It is only in the severer cases that this is true. Brooks' experience was the same. It was only in the marked cases that reaction occurred.

With regard to the permanence of the cure in cases of eczema, I would say that I have had several recurrences; and in one instance I found the child sensitive to a protein that I had not suspected.

Dr Morse's question, I am sorry that I am not in a position to give a satisfactory answer to. I realize that eczemas have been considered to be due to intolerance to fat or sugar. I treated the cases on that basis until I began this work. Some cases may recover by eliminating or reducing these articles of diet; but sixteen out of eighteen patients that I examined gave a positive skin test, showing cutaneous reactions to some food. The cutaneous test affords a definite indication, I should say, in a large percentage of cases. I do not mean to state that this cutaneous reaction is an absolute indication, however. It is possible that such work as Dr. Hamill has done may show that it is not always absolutely specific. Whether it is or not will depend on the results of the collective work of a number of investigators. I think that without question asthma is a disease of multiple etiology. There are probably cases of other origin than this. In only a small percentage of such cases have I obtained a definite indication of the food origin.

With reference to Dr. Hoobler's question, I would say that before the time my first report was published I had used about eighty institutional children, nearly normal, as controls, and had obtained no reactions. Dr. Talbot has also done that at the Massachusetts General Hospital. He found reactions in one hundred children. One was an infant with eczema.

In regard to the type of case referred to by Dr. Hamill, I cannot add anything to what he says; because I have made no tests in this type of cases and, therefore, am not competent to express an opinion. In several of these cases of great idiosyncrasy I have made tests. In two cases I made the test that Dr. Talbot did in one, and found they reacted to other eggs than hens'—those of the duck and the goose—and to chicken. I have also found that they reacted to the serum of these animals, and that of the turkey, giving a pronounced cutaneous reaction.

Dr. Porter's question in regard to the way in which these children originally become sensitized is difficult to answer. Some of them are actively sensitized through the gastroenteric tract. They ingest a certain food for a time without any toxic disturbances being observed. Then they show signs of food poisoning. It is rational to suppose that this is the way in which the sensitization occurs in children, since it can occur that way in animals. A sufficient quantity of foreign proteins will pass through the mucous membrane to produce sensitization

Regarding the origin of urticaria, I do not feel able to say that all cases are caused by proteins. I have read of a case in which urticaria was caused by cane-sugar. That many, however, are due to food proteins, there is no doubt. Urticaria is probably due to multiple causes.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Hernia of the Stomach through the Diaphragm. By W. J. S. Bythell (British Journal of Children's Diseases, August, 1915). The patient, a boy of nine years old, gave the history of persistent vomiting associated with little abdominal pain. Examination showed dullness on the right side of the abdomen from the costal margin downward. The right rectus muscle was prominent. The vomiting persisted after admission and a diagnosis of pyloric obstruction was made. A bismuth meal showed the stomach to the right of the median line. This suggested transposition of the stomach, but the heart was found to be in the proper place. At the time of operation the epigastrium was seen to be filled by the colon, a small piece of the stomach being seen very far back under the diaphragm. The major portion of the stomach was herniated through the esophageal opening of the diaphragm. The hernia recurred and a second operation was necessary, at which time a gastrostomy was performed permanently to fix the stomach in the proper position.

Recurrent Vaginal Fibroid Polypi in a Child. Specimen.—By E. W. Skelton, M.D. (Long Island Med. Jour). Ella J. was admitted to the hospital on Sept. 8th, 1914, the mother stating that the child had a mass protruding from the vagina. The child is 2 years old and about eight months ago the mother first noticed the trouble. A physician twice attempted the removal by surgical means only to have a recurrence, for which the mother brought the child to the hospital for treatment. The removed specimens had been examined by the family physician, who has done some pathologic work, and he reported the tissue to be sarcomatous. On the 9th of September I removed the tissue, which I now show you. By reason of the age of the child the parts are naturally very small and it was with great difficulty that I was enabled to trace up the tissue to its point of origin. As you will see, the different parts are more or less rounded and are pedunculated, resembling somewhat a bunch of grapes; many broke off in the removal and I show only a part of the entire mass. The tissue bled very freely, which made the removal still more difficult. After I controlled the bleeding I touched the base with carbolic and neutralized with alcohol. As far as I could see, the entire mass was removed. I had the tissue examined by our own pathologist, who did not confirm the previous diagnosis of sarcoma and we then referred the tissue to Dr. Murray who carefully examined several new slides and reports it to be an oedematous fibroid. I am sorry to report the condition has recurred and I will have to devise some other means to remove it.

Rupture of the Heart in a Child.—J. Anderson (Lancet, March 27, 1915) records a case of spontaneous rupture of the heart in a girl five years of age. The interpretation which was placed on the case was that the child was the subject of an abnormal development of the coronary arteries. The vessels were unusually narrow and the lumen was encroached upon in places by the areas of thickening in the inner coat due evidently to a syphiltic endarteritis. A hematoma in the septum was more than likely the result of thrombosis in the descending branch of the left coronary artery and represented really a dissecting aneurysm of the heart wall. Evidences of syphilis were seen in the other organs as well as in the heart itself. Spirochetes were demonstrated in the heart muscle.

Leucocyte Counts during Digestion in Bottle-Fed Infants.—By A. Graeme Mitchell (American Journal of Diseases of Children, May, 1915). This author would seem to have carried out as yet the most extensive research on this question so far as infants and children are concerned. As will be seen from the conclusions quoted, his findings are opposed to the usually accepted views, and he accounts for this by the fact that the majority of workers have delayed too long after a feed before examining the blood. He usually made an examination immediately after a meal, fifteen minutes later, thirty minutes later, and then every half hour until four hours after the ingestion of food. His conclusions are:

1. Bottle-fed babies do not constantly show digestive leucocytosis; in fact, the majority show a smaller number of leucocytes in the superficial blood after taking food than before.
2. This decrease is greatest at from one to two and a half hours after food, and tends to rise before the next feeding.
3. When a rise does occur, it is most frequently soon after feeding, and begins to decline in half an hour.
4. Crying, struggling, and chilling of the part from which the blood is extracted increases the count.
5. There seems to be as yet no adequate explanation for the increase or decrease.
6. Comparative counts should be made at the same time of day, and at the same time in relation to food.

Gonorrhoea in Children.—Walter D. Bieberbach (The American Journal of Urology, p. 278). The father of a family of three children took to the genito-urinary clinic at the Worcester City Hospital a boy aged 6 years. He complained that during the past ten days the child was very restless, and had considerable trouble in passing urine. There was marked phimosis, so that it was impossible to retract the foreskin. The prepuce was tender, swollen and congeted, and about its margin was a copious white discharge. The diagnosis was balanoposthitis due to a long tight foreskin. Circumcision was performed under ether. A few hours after the operation the child was unable to pass urine. The dressings were removed, and the external meatus was found to be pouted and swollen and the lips glued together. On separating them there was a free flow of thick white pus, which allowed urine to be passed. The pus contained Gram-negative diplococci, both by staining and culture.

An attempt was made to learn the source of infection. The mother and father and the remainder of the family—a girl aged 13 years, and a step-brother to the other children, aged 18 years—were examined. The parents denied all venereal disease, and examination was negative. The boy of 18 gave a history of gonorrhea 4 months ago. He had been treated by a practitioner, and pronounced cured a month ago. He showed no signs of the disease. The girl of 13 had a ruptured hymen, and, on separating the vaginal walls, there was a somewhat thin greyish discharge which, on microscopical examination, showed gonococci. Smears from the urethra were negative. She was suffering from a sub-acute or chronic gonorrhea.

The cases were reported to the Society for the Prevention of Cruelty to Children, and a female agent was sent to investigate the conditions of the family. Each of the children was questioned closely. The two boys suffering from gonorrhea were very stubborn, and refused to answer questions. The girl admitted that 6 or 7 weeks before the boy of 18 attempted sexual intercourse. After this she suffered considerable pain, and for some time experienced a burning sensation on micturition When the boy of 18 learned that the agent had been to the house, he disappeared, and has not since been seen.

The source of infection in the two young children was from the girl. The three occupied the same bed. The writer believes that sexual relations occurred between the girl and two younger boys. The sexual organs of both male children were well developed, much larger than those of the average child of the same years. The writer does not believe that the two boys were infected from bed clothing or contaminated articles of the house-hold, because during the supposed period that the girl was suffering from the acute infection the boys were free.

The mother was instructed as to the discharge, and ordered to burn all dressings. She was also warned of the dangers of gonorrheal opthalmia. The boy of 3 was given 10 drops of thyresol daily, while the boy of 6 was given 15. In both cases the anterior urethra was irrigated every other day with a solution of protargol, 1 in 8000, and gradually increased up to 1 to 4000. Irrigation was performed by inserting a soft rubber catheter into the anterior urethra, and gently injecting. At the end of the first week the boy of 6 years developed a posterior infection. This was treated by placing the catheter in the posterior urethra and gently irrigating. After a few irrigations the postherior urethra cleared. At the end of the second week both cases showed little urethral discharge, and, on microscopic examination, few gonococci were found. Instillations were then substituted for irregations. One drachm of a quarter per cent of protargol was instilled into the anterior urethra and retained 5 minutes, or until the child complained of pain, every other day, and the strength of the solution was increased until 5 per cent was reached, which seemed as strong as either child would tolerate. At the beginning of the fourth week the urethral discharge subsided. On stripping the urethra, no discharge was obtained. Smears taken from the anterior urethra with a swab were negative. The treatment was stopped, and the children were kept under observation for two weeks. No symptoms being present, they were discharged as cured.

Ovarian Sarcomata in Children: An Account of Three Cases.—By T. T. Higgins (British Journal of Children's Diseases, June, 1915, p. 161). The following is a brief summary of the cases:

1. Female, aet. 5 years, admitted to hospital with fever, and large tender swelling in lower part of abdomen; rectal examination revealed presence of tumor in pelvis. The swelling had been first noticed six weeks previously, and had gradually increased in size. During the illness colic and constipation had been prominent symptoms, and during the week just before admission a hemorrhagic vaginal discharge had been noticed. Laparotomy was performed, and a large left-sided ovarian sarcoma (round and spindle-celled), weighing 3 1-2 pounds, was removed. X-ray treatment was carried out after operation to diminish chance of recurrence. Child well five months later.

2. Female, aet. 10 years, admitted to hospital with a history of recent colic, constipation, and loss of weight. A lump in the belly had been noticed five weeks previously. On admission, child was pale, temperature normal, and there was detected a round, freely movable tumor which rose out of pelvis, and per rectum felt on right side. Laparotomy and removal of a sarcomatous tumor (round and spindle-celled) from right broad ligament.

3. Female, eat. 7 years, was admitted to hospital in an exhausted condition after an illness of four months' duration characterized by fever, with a large abdominal mass rising out of right side of pelvis and reaching to the level of the liver. Death. Post-mortem a large round-celled sarcoma weighing 5 3-4 pounds was found in connection with the right ovary.

Exophthalmic Goiter in Children is not a very common condition, since it is much more usual at or just after adolescence and, of course, considerably more common in girls and young women than in youths. The first and chief essential in the treatment is mental and physical rest. A change of environment is also beneficial.

Since exophthalmic goiter is essentially a toxemia, all other toxic conditions should be reduced as much as possible or entirely eliminated. This calls for careful regulation of the diet with a reduction of the amount of putrefiable proteids that are given; in fact, in such cases meat can with advantage be entirely dispensed with. There is on record a case of hyperthyroidism with diarrhea and marked intestinal symptoms in which castor oil, opium and other astringents had previously failed, where the administration of secretin successfully checked the diarrhea and benefitted the general condition. In any event, this hormone is of advantage in treating the digestive insufficiencies in conjunction with exophthalmic goiter or for that matter any other chronic condition.

Attention has been called quite recently to the importance of also removing affected tonsils and adenoids in persons suffering from this disorder upon whom an operation has been decided, since disturbances of the tonsils and adenoids are so common in children, and it would seem doubly important to look into this matter as an associated part of the treatment.

It is suggested that there is a thymus origin for many cases of Graves' disease just as disturbance in the balance between ovarian secretion and the other internal secretions is undoubtedly a common factor in its causation in young women. It would seem that in young children, the thymus is more likely to be a cause than otherwise and if so, recourse to thymus therapy should offer considerable prospect of success; as a matter of fact, a number of authorities are convinced that the thymus medication is of considerable value in exophthalmic goiter. Dor, of Lyons, reports that "nothing ameliorates exophthalmic goiter like thymus." Solis Cohen, of Philadelphia, prefers this extract to all other organotherapeutic preparations, and save for a local iodine ointment and suggestions regarding diet, hygiene and hydrotherapy, he uses thymus medication alone, giving 7 1-2 to 45 grains per day in divided doses for months.

In cases where the heart symptoms are quite marked, it is well to remember that adrenalin given in doses of 2 to 10 minims depending, of course, upon the age and re-activity of the patient, has caused considerable benefit to these particular symptoms. In such cases, it may be of still more advantage to give total adrenal substance in 1-4 to 1 grain doses for a period of months.

The X-ray is recommended very highly by some physicians and, of course, the surgeons point with pride, which, by the way, is not always unmingled with chagrin, to the results of ligation or partial extirpation. It would seem, however, that all medical and organotherapeutic means should be thoroughly tried before recourse to operation, especially in young children, for in such cases the hyperthyroidism has not become such a decided habit, and is more likely to respond to organotherapy and other associated procedures.—American Medicine.

The Mode of Infection and Etiology of Epidemic Poliomyelitis.—By Simon Flexner (American Journal of Diseases of Children, May, 1915).—In this paper the author discusses the two present day views regarding the mode of dissemination. According to one school the disease is communicated by personal contact, and to this view Flexner gives his adherence, whereas it is held by others that the disease is conveyed by the stable fly. The evidence in favor of this latter theory is based on the work of Rosenau, and Anderson and Frost, who stated that they had been successful in transmitting the disease from one monkey to another by allowing stable flies to feed first on an infected animal and then on a healthy animal. Unfortunately for this view subsequent workers did not confirm these results, and later Anderson and Frost admitted that they had been unable to repeat their earlier successful experiments

In considering the other view it must be borne in mind that within recent years our conception of poliomyelitis has undergone a great change. It is now appreciated that there are paralytic and non-paralytic or ambulant types of the disease. The proof that such abortive or ambulant types are seen is based on cerebro-spinal fluid findings and immunity changes in the blood, and that the virus causing the disease has been found in the naso-pharynx of such cases in sufficient amount to infect monkeys. The organism has also been obtained from throats of healthy individuals who have come in intimate contact with persons acutely ill with poliomyelitis. Thus the question of poliomyelitis carriers must be raised, and it is most likely that it is by means of healthy and chronic carriers that the disease is distributed. As Flexner says, "Given, therefore, the possibility of the distribution of the virus being affected by (1) the frankly ill, (2) the slightly ill, (3) healthy, and (4) chronic carriers (i.e., people recovered from the disease), the striking discrepancy noted between the prevalance of cases in small sparsely populated rural communities and the more thickly populated cities at once disappears."

Under the question of the etiology Flexner states that two years ago he and Noguchi obtained cultures of a minute organism which they thought was possibly the microbic agent. The cultures were derived from the central nervous organs of human beings and monkeys who had had poliomyelitis. They were successfel in causing the disease in monkeys with these cultures. Recently they have confirmed this result. The cultures had been isolated eighteen months previously, and had been sub-cultured several times. Finally, they used a medium of ascitic fluid and broth. The fluid, which contained very large numbers of the minute organisms, was injected intra-spinally and intraperitoneally into rhesus monkeys. Single injections caused no effect, but repeated injections invariably caused the disease. This is quite in accord with what Flexner and Lewis had previously shown. These workers found that when subminimal doses of the usual virus were injected no effect was produced, but that when subminimal doses were repeated paralysis suddenly supervened..

Inguinal Hernia in a Child Containing Cecum.—By E. W. Skelton, M.D. (Long Island Medical Journal). R. C., male, aged two, was admitted to my service with the history of an irreducible right inguinal hernia. I operated on the child as promptly as possible and when the tissues were divided and the sac isolated and opened, I found its contents to be the whole of the caput ceci and about an inch of the ileum. The ring was not so tight that the constriction had effected the circulation to any extent and after warm applications for a short time the color improved and the whole mass was reduced and the regular operation for hernia completed. The child made an excellent recovery and I report the case as a matter of passing interest as to the sac contents inasmuch as I had never met a similar casé.

Tuberculous Hip Disease.—By P. W. Nathan (Jour. A. M.A., 1915, lxiv, 1732), bases his remarks upon a study of about 200 cases in which particular attention was given to results after such an individual had used his affected hip during adult life. Tuberculosis of the hip is a destructive disease, which practically always leads to marked impairment of the joint structure. So far as we know, there is no treatment which will prevent or limit the destructive process and we have not, therefore, a method which will prevent permanent impairment of joint function. Such being the case, we have no adequate treatment of hip disease. For the present, we must be content to choose the method which will give the patient the strongest limb to stand and walk on, irrespective of joint motion or shortening. At present the treatment with the short plaster-of-Paris spica, with all its shortcomings, is better than any other heretofore in use, provided it is scientifically carried out.

BOOK REVIEWS

Diet and Disease in Infancy.—By Hector Charles Cameron, M.D., F.R.C.P.; Assistant Physician and Physician in Charge of the Department for Diseases of Children, Guy's Hospital. With four colored plates and thirteen text-figures. 204 pages, cloth; $2.00 net. J. & A. Churchill, printers, 7 Great Marlborough Street, London. P. Blakiston's Son & Co., Publishers, 1012 Walnut Street, Philadelphia.

Dr. Cameron in presenting his ideas on infant feeding addresses himself chiefly to general practitioners and senior students of medicine. He starts out with the assertion that "the dietetic disorders of infancy and the infective disorders of infancy stand to each other in a relationship which is constantly changing, and together present a combination in which it is not always possible to distinguish cause from effect." Therefore, he believes that the control of the diet in infancy should be exercised, alone, by medical men. In presenting an account of the common disorders of digestion and nutrition in infancy he does so with trepidation averring that our ignorance of much that is fundamental is too profound to permit of a complete presentation of the subject. The author lays much emphasis upon the difficulties of the subject of infant feeding. He believes that success can be achieved by paying strict attention to rules of cleanliness, dilution and dosage.

Dr. Cameron insists on breast feeding whenever possible, yet he believes that the child can be successfully fed on boiled milk without incurring any special danger of rickets or scurvy and in comparative safety from tubercle and other bacteria. He only suggests dried milks, condensed milks and proprietary foods during journeys and at other times when good fresh milk cannot be obtained.

The reviewer is pleased to see that the author takes up the subject of vitamines in milk, but we regret to see that he barely mentions the subject. These important but intangible substances are very necessary for undisturbed growth and development. They are substances very susceptible to heat and a temperature of more than 150 F. completely destroys their influence. Consequently infantile scurvy is liable to follow in a child whose sustenance is from pasteurized or sterilized milk. Dried milks or condensed milks are objectionable for the same reason.

After reviewing the scientific principles bearing on the question, the author goes into the actual application of these principles, being very explicit in every instance. It is a work that will be found of great help to every physician who is called upon to give advice where the subject of feeding babies is concerned.

Diarrheal Inflammatory, Obstructive, and Parasitic Diseases of the Gastro-Intestinal Tract.—By Samuel Goodwin Gant, M.D., LL.D.; Professor of Diseases of the Colon, Sigmoid Flexure, Rectum and Anus at the New York Post-Graduate Medical School and Hospital. Octavo of 604 pages, 181 illustrations. Philadelphia and London; W. B. Saunders Co., 1915. Cloth, $6.00, net. Half Morocco, $7.50, net.

This new book by Professor Gant is a fitting successor to his former book on Constipation and Intestinal Obstruction. It is a treatise that has long been needed, as it brings under one cover all the details of diagnosis and treatment. The work contains 52 chapters, the last four being devoted to the various surgical methods involved. It seems that the principle idea of the author in the preparation of this volume has been to present in a concise form to students and practitioners a complete yet practical treatise covering the etiology, pathology, symptoms, diagnosis and treatment of acute and chronic diarrhea and allied affections as well as diseases dependent upon gastro-intestinal parasites. The various forms of toxic dairrhea are exhaustively treated and every detail of differential diagnosis given. The chapters devoted to diarrhea in acute infections such as measles, scarlet fever, pneumonia and typhoid fever and to compensatory diarrheas as those occurring in old age, Addison's disease, diabetes, exopthalmic goiter and burns are highly practical. In the preparation of the volume the author has wisely eliminated the useless material so as to make the book convenient in size and at the same time easily comprehensible. His discussions are as brief as justice to the subject would permit, and technical terms, confusing nomenclature, profuse histolic data, complicated laboratory methods of examination, prolonged discussion of mooted points, wearying statistic tables, and obsolete views have been omitted. The author has successfully arranged the subjects in a logical and convenient manner, so that the busy practitioner or student may quickly refer to whatever he desires relative to diarrheal and parasitic affections. For the busy practitioner he has incorporated the chapter devoted to various formulas covering every phase of the medical treatment of diarrhea, which will prove of inestimable value to the busy man.

The entire work is written in a pleasing style and treats so thoroughly of this interesting and important subject, that the book is one that should be in the hands of every physician and surgeon.

Nervous Diseases.—By G. Aschaffenburg, Cologne; H. Curschmann, Mayence; R. Finkelnburg, Bonn; R. Gaupp, Tubingen; C. Hirsch, Gottingen; Fr. Jamin, Erlangen; J. Ibrahim, Munich; Fedor Krause, Berlin; M. Lewandowsky, Berlin; H. Liepmann, Berlin; L. R. Muller, Augsburg; H. Schlesinger, Vienna; S. Schoenborn, Heidelberg; H. Starck. Karsruhe; H. Steinert, Leipsic. Authorized English Edition edited by Charles W. Burr, B.S., M.D., Professor of Mental Diseases in the University of Pennsylvania; Neurologist to the Philadelphia General Hospital. With 246 Text Illustrations. Two octavo volumes, buckram binding. Cloth, $12.00, postpaid. P. Blakiston's Son & Co., Publishers, 1012 Walnut St., Philadelphia.

This splendid work of two volumes aggregating more than 1,000 pages is based on the personal knowledge and experience of the leading German neurologists and psycho-neurologists, all men of established reputation. The chapters are based on the personal knowledge and experience of each writer presenting his own well-thought out, mature opinions. The work is thoroughly scientific in tone and conservative in attitude, a matter of much importance in these days when much wild doctrine, especially relating to mental therapeutics, is being offered the public, it has not been overlooked by the writers that the only useful knowledge is that which leads to sane therapeutics. It is hardly necessary to discuss the advantages of such a work written by many authors, over a one-man book as has been done by the editor of the German edition. The translators have faithfully executed their work and give an accurate rendering of the writers' statements. The American editor has not cut out the many references to European health resorts for the reason, in his opinion, that it may serve as a stimulant to American physicians to develop and encourage their own natural water places instead of sending their patients abroad.

In order to give an idea what subjects are covered by this work, we will quote from the Table of Contents:

In Volume I, the first chapter embraces General Diagnostics of Nervous Diseases, by Privatdocent Dr. S. Schoenborn, Heidelberg, embracing 77 pages. The second chapter, Diseases of the Peripheral Nerves, by Privatdocent Dr. H. Steinert, Leipsic, embracing 110 pages. Chapter 3, Diseases of the Spinal Cord, by Dr. Max Rothmann, embracing 220 pages. Chapter 4, The Myopathies Without Demonstrable Changes in the Nervous System, written by Oberarzt Dr. Hans Curschmann, Mayence, embraces 19 pages. Chapter 5, Diseases of the Brain, by Professor Dr. Hugo Liepmann, Berlin, embracing 104 pages. Volume II, Chapter 5, continued, embracing 160 pages. Chapter 6, The Organic Nervous Diseases of Childhood, by Dr. J. Ibrahim, Munich, embracing 52 pages. Chapter 7, Hyperkinetic Diseases, written by Dr. Fr. Pineles, Vienna, embracing 28 pages. Chapter 8, Psychastenic States, bv Prof. Dr. G. Aschaffenburg, Cologne, embracing 78 pages. Chapter 9, Diseases of the Sympathetic Nervous System, by Oberartz Dr. L. R. Muller, Augsburg, embracing 10 pages. Chapter 10 Vasomotor and Trophic Diseases, by Dr. Hans Curschmann, Mayence, embracing 68 pages. Chapter 11, Intoxication Diseases of the Nervous System, by Dr. F. Quensel, Leipsic, embracing 23 pages. Chapter 12, Operative Treatment of Nervous Diseases, by Prof. Fedor Krause, Berlin embracing 31 pages. Chapter 13, The Diagnosis and Treatment of Neurasthenia, Psychasthenia, Hysteria and Borderland Mental States, written by Charles W. Burr, B.S., M.D., Philadelphia, embracing 29 pages.

The main object in the preparation of this work has been to produce for students and practitioners (a work essential for non-specialists) a text-book comprising old material, that has long been established, as well as the new, nay, the very latest acquisitions of neurotherapeutics. In this work will be found just what information practitioners who have but little time for specialization need, a book containing what is essential, concise and vitally instructive and at the same time devoid of that fullness to be found in special monographs. These requirements could not be better fulfilled than by having the separate chapters written by authors whose work and original research prove that they stand in the very midst of the events and the literature of each field concerned.

The rapid advances made in neuro-therapeutics during the past few decades has as a natural consequence induced specialization within the confines of nervous diseases. This tendency has furthered the unlike scientific descent of the leading investigators, among whom from the very first there was a clear-cut distinction between the psychiatrical and the interno-neurologists; on the other hand, neurology in itself has always been a field to which not a few borderland fields naturally attached themselves. Therefore, neuro-therapeutics today sands in intimate relation not only with psychiatry and internal medicine, but also with opthalmology and otology, with dermatology, bacterio-serology, and above all with surgery, making use more and more of the aid afforded by these special sciences. This newest and latest work on diseases of the nervous system covers the subject in a most satisfactory and intelligible manner that the multiplicity of authors, the uniformity of presentation necessarily suffers, therefore repetitions cannot altogether be avoided. A careful reading of these volumes by non-specializing physicians will give them a better understanding of neurology as an equally justifiable and important special field long recognized as being of signal importance to the successful practice of medicine.

It gives us pleasure to commend this work. The index is full and complete and the reviewer has not for some time examined a work that has impressed him more favorably. The work should be in the library of every general practitioner.

A Manual of Surgery.—By Francis T. Stewart, M.D., Professor of Clinical Surgery, Jefferson Medical College; Surgeon to the Germantown Hospital: Out-Patient Surgeon to the Pennsylvania Hospital. Fourth edition, with 580 illustrations. Handsome buckram binding, $4.00, net P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, Publishers.

This is one of the most handy and practical manuals of surgery that the reviewer has had an opportunity to examine. The author has

PEDIATRICS

Vol. XXVII OCTOBER, 1915 No. 10

EDITORIAL

INBORN ANOMALIES OF DIGESTION

In much that is written upon the subject of the Feeding of Infants it is often assumed that all digestive disturbances proceed from faults in the composition of the diet, from gross excess, or from a want of cleanliness.

No doubt among the very poor the proportion of cases directly attributable to these causes is much higher than among those who are better situated, and there is a wide field for the instruction of poor mothers in the elementary rules of health and infant hygiene. Yet even among the poor there is abundant evidence that malnutrition and dyspepsia, on breast or on bottle, are not always to be attributed to gross ignorance or culpable carelessness on the part of the mother.

Dyspepsia is very frequently the expression of an underlying infection. The infant at birth has but one function highly developed—that of absorbing an amount of food which, relatively to that of the adult, is enormous. A function so highly developed is very readily disturbed, and infections of all sorts and in the most various situations present themselves in the guise of a primary digestive disturbance. Still more interesting is the large group of cases in which dyspepsia is dependent on peculiarities of infantile diathesis, and upon inherited, inborn abnormality of digestion. Among the infants of the well-to-do classes, where the composition and amounts of the diet are well controlled and subject to the most careful scrutiny, and where the hygienic conditions are faultless, digestive disturbances are rarely ex alimentatione—from gross assaults upon the digestive powers of the infant by an absolutely irrational diet—but arise commonly ex infectione, or ex constitutione.

The suggestion that it is possible to recognize types of individuals whose aspect and whose liability to suffer from a certain train of symptoms mark them off as belonging to a certain diathesis, is not new. Indeed, the conception of diathesis is almost as old as the study of medicine itself. For long it held a foremost place in all medical literature. Later, in the second half of the last century especially, there came a time when it fell into disrepute. These years were marked by great advances in the study of the local disorders of the different parts of the body as the use of the stethoscope grew general, and the methods of physical examination became highly developed. Bright, Addison, Wilks, Virchow, and many others taught the importance of morbid anatomy, and the necessity of interpreting all clinical phenomena in the light of the examination of viscera post mortem. Later still the science of bacteriology sprang into being and profoundly influenced our whole conception of the processes of disease. With more definite knowledge of these processes much of the old-time teaching upon diathesis was found to be no longer tenable, and the very name to a great extent fell into disuse. Today it again stands in the forefront of interest, both in medicine as a whole, and especially in the study of the disorders of infancy. Although most of the types of diathesis formerly described have been discarded, it is still possible to recognize certain inborn and inherited constitutional anomalies marked by the constant association in the same individual of a wide variety of symptoms and often enables us to predict the appearance of others at a later time.

Although we have no sufficient knowledge of the true nature of the constitutional anomaly, we believe that this anomaly accounts for the presence of the local disorder, and that treatment to be successful must be directed not only against any one local manifestation, but must combat the underlying cause—the diathesis.

THE TOXEMIAS OF THE NEWLY BORN

In speaking of the artificial feeding of infants in the first week of life, mention was made of the risk which the newly born child runs of suffering from a generalized septic infection, the source of which is perhaps usually found in the absorption of organism from the alimentary canal.

The infant nursed at his mother's breast enjoys in these early days a twofold protection which is lacking in the artificially fed child. In the first place, he derives from the colostrum a supply of immune bodies which are capable of conferring protection until the development of his own defensive powers; and in the second place, the bacterial growth in the intestine tends to establish itself in a constant and well-controlled manner, and the change from the sterility which obtains at birth to the fully developed bacterial picture is accomplished normally and without disturbance.

In the intestine of the artificially fed child matters may not proceed so smoothly, and in the absence of the antagonism of the normal bacterial content pathogenic organisms may gain a foothold and develop with dangerous speed.

Especially is this the case in premature infants, and it is common experience that the various manifestations of the toxaemias of the newly born—icterus neonatorum, and septic diarrhoea—are all more frequent in children born before full time. The explanation of this predisposition lies partly in the increased vulnerability of the intestinal wall, which acts as a less effective barrier to bacteria and their toxins, as experiments by Czerny show, partly in the circumstance that a premature child is often saturated with the syphilitic or other toxin, and partly, perhaps, in the more frequent failure of breast-nursing. At any rate, it is certain that prematurity is itself a strong predisposing cause of sepsis, and that syphilitic infants are liable to suffer severely.

Although the alimentary canal is probably the chief source of infection, it is not the only source. A generalized infection may take place from disease of the respiratory or urinary tracts or from lesions of the skin[1] or umbilicus. In many cases, however, it is probable that the infection of the umbilicus arises secondarily to the generalized infection and is not the primary source of the trouble.

It is more doubtful what part is played by infection of the mother and material sepsis in general. The care of the newly born should be marked by scrupulous cleanliness.

---

[1] The vernix caseosa, which has protected the skin of the foetus from maceration in the amniotic fluid, should be removed with the utmost care. Friction is apt to separate the superficial layers of epithelium and thus to afford an inlet to micro-organisms. Pemphigus and erythrodermia desquamativa are probably produced in this way.

INFANTILE SCURVY

By infantile scurvy we mean a disorder, occurring in the latter part of infancy, characterized by severe anaemia, by oozing of blood in a variety of situations and especially by haemorrhage under the periosteum and in the medullary tissue of the bones, by bleeding from the gums, and by haematuria. The first accurate descriptions we owe to Sir Thomas Barlow, and the disorder is also commonly known by the name of Barlow's Disease. Moller, Cheadle, and others who had previously recognized and described many of the symptoms had laid too great stress upon its relationship to or identity with rickets. Moller definitely regarded it as a form of acute rickets.

Infantile scurvy belongs to that comparatively small group of disorders, which includes also scurvy of adult type, beri-beri and possibly pelagra, in which the symptoms appear to be evoked by the absence or deficiency of vitamines or some essential constituent of the diet, which is as yet not capable of being chemically isolated. To these important but intangible substances the name of vitamine has been given. Vitamines, although necessary for undisturbed growth and development, add nothing to the total supply of energy supplied by the food. It is easy to show that they are distinct from the other constituents of the diet, which can be identified by ordinary chemical analysis—fats, carbohydrates, proteins, mineral salts, and water. They are as a class very susceptible to heat, although the temperature destructive to each varies very much. For example, milk in the fresh state contains one substance inhibiting the production of the symptoms of beri-beri, and another which is anti-scorbutic, but the temperature at which each is destroyed is very different.

Infantile scurvy is most readily produced in infants who have been fed exclusively upon dried milks, condensed milks, or carefully refined infant foods. It certainly appears to be more common among the children of the well-to-do classes than among the poor, perhaps because among the lower classes one diet is seldom rigidly adhered to throughout, and the child at an early age receives stray morsels from the food of the family. There is some evidence that infantile scurvy is especially common when the diet consists exclusively of one or other of the brands of dried malted milk on the market, and the high price of these confines their uses to the well-to-do. Scurvy, however, is not unknown in infants fed upon boiled or pasteurized milk, and cases have even been recorded in which it is said that the child has had no food but breast milk. It is certain that idiosyncrasy plays a prominent part, and amongst a great number of infants fed in the same way, one only will be affected Nevertheless, the rapidity with which the symptoms disappear when fresh unboiled milk is given does not permit us to doubt the origin of the illness.

The age of the children to be affected is most commonly between six months and eighteen months, although isolated cases have been recorded both at an earlier and at a later age. Boys are said to be affected more frequently than girls.

All cases are characterized by anaemia of greater or less degree. In many of the dietetic disorders of infancy—in chronic dyspepsia, for example, or in rickets—an unhealthy pallor of the skin is a marked symptom. In such cases, however, an examination of the blood often shows little change in the haemoglobin percentage or in the number of corpuscles, and we are forced to regard the apparent anaemia as due to vasomotor changes in the skin, an explanation which accords with the readiness with which the child flushes and the ease with which erythematous marks may be produced on the skin by slight pressure. In infantile scurvy, however, the blood picture is often that of a severe secondary anaemia. The haemoglobin may be reduced below 50 per cent, while the red cells may fall to 2,000,000, and there may be considerable poikilocytosis and anisocytosis. Abnormal cell forms are commonly absent.

THE EXUDATIVE DIATHESIS

We owe to Czerny a clear statement of the clinical symptoms of a particular diathesis which is so common that its manifestations in greater or less degree are met with every day in practice and are familiar to all.

In the older medicine a group of symptoms, constantly recurring and of great frequency, was described under the name of "scrofula." Children who showed the scrofulous diathesis were characterized by a certain physical aspect—harsh, dry skin, with a pronounced tendency to certain scaly and lichenoid eruptions, fine silky hair, which grew irregularly beyond the true hairy scalp on to the forehead and over the zygomatic arch, long eyelashes, and a frequency to a further hairy growth on the back of the neck and between the scapulae; chronic catarrhs in various situations were almost constant—nasal catarrh, with a profuse secretion which irritated and caused thickening of the upper lip, naso-pharyngeal catarrh, bronchial catarrh, phlyctenular conjunctivitis, leucorrhoea, and mucous diarrhoea. As a result of the chronic irritation of the mucous membranes a secondary glandular enlargement was the rule. Tonsillar over-growth, adenoid vegetations, hypertrophy of the lymphatic glands and of the lymphoid tissue generally of the whole body were commonly found.

With the discovery of the true nature of the tuberculous infection it became recognized that a large number of scrofulous children were infected with tubercle. In many the enlarged glands became definitely caseous; in others the catarrhal and inflammatory symptoms were combined with diseases of bone clearly of a tuberculous nature or with tuberculides of the skin.

Nevertheless, after the separation of those individuals in whom a tuberculous infection had declared itself, there are still left a very large number of children who would unhesitatingly have been described in former times as of a scrofulous or strumous diathesis. Those children who show the catarrhal and lymphatic changes of the old-time scrofula without evidence of tubercle have been studied under many names. Virchow borrowed from Thomas White[1] the name "inflammatory diathesis;" Heubner, Escherich, and others speak of "lymphatismus" and the "lymphatic constitution;" French authors write of "arthritismus" and neuro-arthritismus," the English authors of "mucous disease" and "status lymphaticus." Czerny, who has traced the diathesis backwards to earliest infancy, where it forms one of the commonest causes of digestive disturbance impressed by the frequency with which exudative processes occur upon the skin and mucous membrane, has given it the name of the "exudative diathesis." He has emphasized especially that the increased vulnerability of skin and mucous membranes is primary, and that the lymphatic enlargement is secondary.

[1] A Treatise on Scrofula, commonly called "the King's Evil." By Thomas White, Surgeon to the London Dispensary; 1784.

PEDIATRICS

ORIGINAL ARTICLES

DIAGNOSIS AND FREQUENCY OF THROMBOSIS OF THE LATERAL SINUS*

BY JAMES ROYDEN PEABODY, M. D.
Louisville, Kentucky

In presenting the subject of lateral sinus thrombosis before this society, I fully realize that those of you who do not specialize in eye, ear, nost and throat work probably consider it an exceedingly rare complication of middle ear disease, and that perhaps the majority of you may never have encountered such a case. I wish it understood, also, that I hope the paper will appeal to the members who are engaged in the general practice of medicine, surgery, and especially the diseases of children; and while I cannot hope to introduce any new ideas to my colleagues who are thoroughly familiar with this specialty, they can help me greatly if they will discuss the paper, and mention any features of interest which I have omitted.

The main points which I desire to emphasize are: (1) That lateral sinus thrombosis is not so rare as we have formerly believed, and that (2) many such cases have occurred in the past without the diagnosis being made or even suspected. During the time I spent in preparing myself for this specialty, I was greatly impressed by the number of operations I saw for lateral sinus thrombosis; but later was told by one of our older specialists that I had an exaggerated idea of the frequency of this condition.

Permit me to relate my experience in Louisville covering a period of two years: I have had one case of my own and assisted in operating upon four others, of lateral thrombosis. Besides these five cases one of the members of the Louisville Eye, Ear. Nose and Throat Society reported five cases operated upon by him during the last two years. Here, then, is a condition considered by most of you very rare, and yet to my knowledge at least ten cases have been under observation in Louisville quite recently.

---

*Read before the Society of Physicians and Surgeons, of Louisville, Kentucky.

In the discussion following report of the five cases before the Eye, Ear, Nose and Throat Society, some of my colleagues contended that it was merely a coincidence, that this rare condition had been so frequently observed during the last two years; but I do not accept that view, and maintain it is only because of our increased knowledge concerning the subject that so many cases have been diagnosed. Three of the ten patients mentioned had been treated for malaria for several weeks before an ear specialist was consulted, and one was under treatment for typhoid fever when the diagnosis of sinus thrombosis was made.

In the Annals of Otology for September, 1914, Dr. E. M. Holmes of Boston, reported five cases of sinus thrombosis operated upon by him at the Boston City Hospital between October 1st, 1913, and February 1st, 1914, in patients admitted with the probable diagnosis of typhoid fever.

In my one case sinus thrombosis developed in a little scarlet fever patient with double otitis media and mastoiditis upon one side, and it was difficult at first to differentiate between a general streptococcemia of scarlet fever and thrombosis of the lateral sinus.

I have mentioned malaria, typhoid and scarlet fever where mistakes have been made in the diagnosis. Besides these diseases I am sure many cases of sinus thrombosis have been called pneumonia, acute endocarditis, or acute pyelitis.

It is impossible for me to quote statistics showing how often sinus thrombosis complicates purulent otitis media, but in examining recent literature one is impressed with the number of cases now reported and how infrequently such cases were recorded in the past. I believe this is due to the fact that the medical and children disease men are now more often on the lookout for this condition, and in doubtful cases of malaria, typhoid and scarlet fever, especially where there is a history of discharging ears, the ear specialist is more frequently consulted than heretofore. The records show that sinus thrombosis is the most common intra-cranial complication, and that it occurs with equal frequency in the course of acute otitis, or an exacerbation of chronic otitis.

For the benefit of those who are unfamiliar with the anatomy of the mastoid, I have had copied two illustrations from

Kerrison's Diseases of the Ear showing the relations of the sinus to the surrounding structures, and also how it is possible for thrombosis to complicate any case of purulent otitis media, especially when mastoiditis exists.

The first picture is semi-diagrammatic, but plainly shows the course of the sinus lateralis or transversus, which as you know begins at the torcular Herophili, traversing and grooving the occipital, parietal and mastoid portions of the temporal bones, and terminates at the jugular bulb becoming the internal jugular. It is divided into horizontal and vertical portions, the vertical portion being called the sigmoid sinus. The place where the horizontal and vertical portions join presents a rather angular turn and is called the knee. The exact course of the sigmoid sinus through the mastoid bone varies in relation to the cortex and its approach to the supra-meatal spine, and according to some observers the sinus extends further forward on the right side than the left. In some instances the sinus impinges upon the meatal wall, and in such cases one would surely injure the sinus in opening the antrum.

This picture also demonstrates how pus within the mastoid can travel in various directions and induce other intra-cranial lesions. When pus perforates the roof of the antrum it produces an extra-dural abscess at point "A;" or unless relieved by operation the brain substance may be involved and a cerebral abscess develop at "B;" or it may travel backward and cause a peri-sinus thrombosis "D;" passing downward and forward from the mastoid or downward from the tympanic cavity the jugular bulb may become infected "G," giving rise to a thrombosis of the sigmoid sinus. Of course the meninges may become directly involved, resulting in either a limited pachymeningitis, or a leptomeningitis.

Your attention is especially directed to the second picture which represents a vertical section of the mastoid region. Here you see the mastoid cells, the sinus with its dural covering, and the cerebellum. We know that the dura covering the lateral convex surface of the brain has a very strong resisting power against infection, but at this point the dura is divided into two layers; the outer layer is attached to the edges of the sigmoid groove and forms the outer wall of the sinus; the inner layer is stretched tightly across the sigmoid groove forming the inner sinus wall. Therefore we have the dura over the sinus one-half the usual thickness, and not so resistant as the dura covering the brain. This is one factor which predisposes to the formation of a thrombus in the sinus. There is also a physiological condition which favors the formation of a clot in the sinus. I refer to the slight or even negative pressure of the blood in the sinus and jugular, and to the fact that the blood current along the wall of the sinus is weaker than in the center. On deep inspiration the jugular vein collapses, but the sinus remains open because the walls are fixed to the bone. Now, suppose this bony covering is diseased, "and this often happens in mastoiditis," then the sinus loses its bony protection and also collapses, and we have ideal conditions favoring the formation of a clot. In our operations upon the mastoid peri-sinus abscess is frequently encountered, and this is the immediate precursor of sinus thrombosis in the majority of cases This second picture shows a peri-sinus abscess pressing upon the walls of the sinus, and it is easy to understand that unless the pus is removed the outer wall of the sinus may become infected, and as a further development of this sinus phlebitis an intra-sinus clot forms.

I do not wish to convey the impression that every case of peri-sinus abscess will be followed by thrombosis of the sinus, but in children who develop middle ear troubles complicating the acute infectious diseases, especially scarlet fever, the power of resistance is greatly lowered, and unless the mastoid inflammation is promptly relieved we must not be surprised if sinus thrombosis develops.

There is still another way in which the sinus may become infected from middle ear inflammation, and that is metastically without involving the mastoid. These cases are especially hard to diagnose, because the symptoms of mastoiditis are absent

I will not discuss the pathological changes in the sinus wall and its contents resulting in clot formation, because the main purpose of this paper is to consider the diagnosis.

The symptoms of sinus thrombosis are due to periodic discharge of septic material into the general circulation and develop very quickly. The symptom which chiefly assists us in making the diagnosis is a marked rise of temperature (103 degrees to 105 degrees F.), and during this period the patient seems extremely ill. This sudden rise in temperature is usually preceded by a chill or rigor, but in some cases this symptom is absent; especially is it rare for children to have a distinct chill. After a few hours the temperature suddenly declines to normal or below, and profuse sweating occurs. During this stage the patient does not feel ill, his appetite is unusually good and he does not present the appearance of one suffering from a grave disease.

Patients often walk into the clinic feeling fairly well, but give the history of having had a chill and high fever, and in some instances do not mention the fact, or it is not considered important, that they have had a discharging ear. These are the cases of thrombosis which are most often called malaria. At first the temperature fluctuations are irregular, sometimes occurring twice in twenty-four hours, in some cases the sudden rise with chills and headache being noted only once in forty-eight hours. It is important in a suspected case to record the temperature every three hours, in order to detect this characteristic curve. Soon this pyemic type of temperature assumes a periodic character, and the sudden rise and fall of fever occurs at regular intervals.

Another important point in the diagnosis is demonstration of the pus organisms in the general blood current (bacteremia), the streptococcus being the form found in most cases of sinus thrombosis; but we know that bacteremia also occurs in other conditions. In my case of sinus thrombosis the finding of the streptococcus in the blood was of no assistance in differentiating between a general streptococcemia of scarlet fever and sinus thrombosis complicating mastoiditis. Leucocytosis of 15,000 to 20,000, with a high polynuclear count exists, which should assist in excluding malaria and typhoid fever. These are symptoms due to disturbance of the cerebral circulation—headache, nausea and vomiting. Optic neuritis or choked disc may also be seen, but as the changes in the optic nerve may not occur until late, the opthalmoscope is of little help to us in making the diagnosis.

What are the physical signs over the mastoid region and jugular? These are inconstant, but some aural surgeons lay stress upon tenderness over the mastoid foramen, which is usually about one and a quarter to one and a half inches behind the orifice of the meatus and on a level with the floor of the canal. A cord-like mass in the neck, which represents the thrombosed jugular, is mentioned as a diagnostic point, but I think this never occurs early. Metastatic abscesses in various parts of the body occur late, but oftentimes the diagnosis is not made until an abscess at the wrist, elbow, knee or ankle is discovered. Foci of metastatic infection also occur in the lung, spleen, liver and brain, and the prognosis is then exceedingly grave but not necessarily hopeless. In the first stage we must rely upon the history and the characteristic fluctuations in temperature for an early diagnosis, and I wish to emphasize one important fact about the history, viz., that although there is always a previous history of a discharging ear, all the ear symptoms including the discharge may have disappeared entirely for a week or more before sinus thrombosis develops.

Those of you who are interested in the subject will find a case reported in the American Medical Journal for March 20th, 1915, which illustrates the last diagnostic point mentioned. It was a case of sinus thrombosis which occurred in Mount Sinai Hospital and is very interesting in many ways. A boy eight and a half years old had pneumonia complicated by bilateral otitis media three weeks before admission to the hospital. There was no cough, no ear discharge, and no fever, the patient having apparently entirely recovered seven days prior to admission. Two weeks previously, however, the patient had complained of headache, and the temperature rose to 102 degrees F., followed the next day by chills, sweats, and a temperature of 105 degrees to 106 degrees F. Still there was no ear complaint nor ear discharge in this case. Ten days elapsed before the diagnosis was made and then only by exclusion. Repeated tests were made for the plasmodium malariae; the Widal test was repeatedly negative; empyema was suspected and paracentesis thoracis was practiced several times; tuberculosis was considered, but the von Pirquet test was negative; acute pyelitis was suggested, but the urine never contained pus cells. Finally the diagnosis was made by demonstration of the streptococcus in the blood, and the patient, after having been in the medical ward for ten days, was transferred to the ear service for operation.

I would ask that you at least suspect this intra-cranial complication when one of your patients, suffering from some acute infectious disease complicated by otitis, develops a sudden rise of temperature preceded by a chill and followed by profuse sweating, unless you can account for the temperature range in some other way; and finally never be too certain about your diagnosis of malaria, typhoid fever, pneumonia, acute endocarditis, acute pyelitis, etc., in patients with a history of discharging ears.

Regarding the prognosis of sinus thrombosis: While we know that a small proportion of cases have recovered spontaneously, it is unsafe to hope for this. The condition must be regarded as grave, especially when extension to the internal jugular has occurred, and metastatic abscesses have formed, a fatal termination may be expected unless promptly relieved by the surgeon. The prognosis depends upon early diagnosis, and the results of operative treatment when sinus thrombosis is recognized early have been exceedingly good.

For discussion, see Society Transactions.

RECENT WORK ON CHILDREN'S DISEASES

BY HUGH THURSFIELD, M.A., M.D., F.R.C.P.

Assistant Physician, St. Bartholomew's Hospital; Physician, Hospital for Sick Children, Great Ormond Street, Etc.

The question of the best form of treatment in the case of infantile pyloric stenosis nearly always arouses acute controversy. In a recent number of the Journal of the American Medical Association, there are two papers dealing with this subject; one by Emmett Holt, who adopts the view that, in a considerable number of sufferers, the operative procedures are unnecessary and form an added danger, while in a smaller number operative interference is necessary and should be undertaken early; the other by the surgeon, Downes, of New York, recording results in 22 consecutive cases.

Holt[1] gives the figures which various authors have compiled of the cases treated by medical means alone, and then states his own results. His series amounted to 57 cases; of these 28 were treated by operation and 14 died; 29 were treated by medical measures alone and 17 died. The total mortality was 55 per cent, and this, according to Holt, is about the average of all large numbers recorded. It must, however, be recollected that of this number a considerable percentage occurred in neglected and wasted infants, who, by the time they came under observation, had not much chance of life. Hutchison recorded 20 cases with two deaths, and others have given results quite as favorable when medical measures have alone been employed. Holt takes the view that physicians and surgeons do not fully appreciate the respective value of the surgical and medical measures; surgeons fail to realize how well a number of these infants do without operative interference, and physicians, on the other hand, fail to recognize how valuable may be the result of an operation performed at the right moment and with sufficient rapidity. Accordingly, he recommends that, when a child is holding his own with medical treatment, operation should be deferred, because such a patient will generally do well and recover without any permanent damage and with no risk of recurrence. On the other hand, when a child is still vomiting and not putting on weight, the services of the surgeon should be requisitioned early

Downes's[2] paper records the results of 22 consecutive cases in his own practice; of these, 7 died. The operation done in 21 of these children was posterior gastro-jejunostomy; in the remaining case partial pyloroplasty. Downes is so impressed with the successful results which follow on early operation in such cases, that he adopts the view that operation is indicated directly the diagnosis is made. He quotes the figures of Scudder of Boston; 17 cases with 4 deaths; and of Richter of Chicago with 23 cases and 3 deaths.

It certainly seems to the critic that Holt's position is on the whole the sounder; as he says, to operate in every case is to ignore the fact that at the lowest estimate 50 per cent get well without operation, and so far as can be ascertained suffer no further trouble from the disease. If the physician will be readier to invite the assistance of the surgeon in those cases which are not doing well, there does not seem to be any reason why the mortality of this condition should not be reduced; but the wholesale operation on every case which is diagnosed would, we believe, tend to raise the mortality. Posterior gastro-jejunostomy, except in the hands of those who are experienced in the handling of surgical measures in young infants, must be a dangerous procedure. It is only just to Dr. Downes to add that, in insisting on the urgency of operation so soon as diagnosis is made, he makes a point that a tumor should be felt. The writer has seen more than one case operated on without this precaution, and at the subsequent autopsy not merely no tumor, but no evidence of stenosis.

Another review dealing with the same subject is published in the Archives of Pediatrics for November, 1914. In this paper, Reuben[3] gives figures combined from various sources. Of 88 cases medically treated, 83 recovered; of 61 treated surgically, 47 made a good recovery. He also gives an instructive table of 185 operations, describing the nature of the operation done and the results, from which it is evident that the most favorable operation is pyloroplasty. Of 43 pyloroplasties 29 recovered and 44 died. Reuben is of much the same opinion as Holt that there are cases which require operation, but that in a considerable number medical measures will suffice to establish a cure. He has used for purposes of differentiation a duodenal catheter, and believes it possible to distinguish by this means cases of mild obstruction from those obstinate and severe cases which urgently require surgical interference.

The Use of Proprietary Foods for Infant Feeding.—Dr. Coutt's[4] report to the Local Government Board on this subject, which is now published separately, should be carefully studied by all physicians; together with the analysis made of many of these preparations. The law on this subject is of such a character that there is practically no limitation as to what may legally be advertised as an infants' food. Thus, a food advertised as "a perfect substitute for mother's milk" was found to contain 90 per cent of starch; and, as Dr. Coutts observes, the climax is reached when a food which contains 73 per cent of starch is advertised as "greatly superior" to mother's milk. Another food is advertised in the following terms: "Most of the so-called infants' food are mere mixtures of starchy meals and quite unfit for the delicate digestion of infants." And yet this very preparation contains 62.6 per cent of starch. Dr. Coutts's statement is full of such examples, and should inspire every physician who reads it with a wholesome distrust of the statements so often made as to the value of the foods, which are continually thrust upon their notice.

It is an interesting speculation whether it is possible to produce in the laboratory a good substitute for mother's milk; what is certain is, that to produce such an article on a commercial scale, at a price which would not be prohibitive for all the poorer portions of the population, is quite impossible. The corollary is clear, and it is that no physician should ever countenance the use of any form of proprietary food, except as a medical measure to be strictly controlled by himself. But though that may be sufficient as regards that proportion of the infants who come under the care of a physician, this is, after all, but a small proportion of the infants of the nation, and it is clear that legislation of a severely restrictive character is urgently required. The medical profession should make themselves acquainted with the facts as set forth in this paper, and should without delay, head a crusade against the use of such articles as foods at all.

Dr Coutts, in his last section, discusses the various recommendations which have been made for the adequate control of these articles, and adopts a somewhat pessimistic attitude with respect to the difficulties to be faced. These difficulties would, in fact, largely disappear if the medical profession were more familiar with the constitution of these foods and were able to describe with accuracy the constituents of any particular food. As Dr. Coutts points out, a chemical analysis attached to each food sold would not necessarily convey to the public much information, but such an analysis in the possession of the doctor would enable him to estimate the probable value of the food in question, and would render impossible the continuance of statements like those we have quoted above. Meanwhile, every doctor should make himself acquainted with the facts disclosed by Dr. Coutts, and should resolve never to sanction the use of an infants' food of which an analysis is not supplied. But the extermination of the evil can, we think, only be attained by a vigorous campaign on the part of the profession, of which at present we can see no sign.

The Purity of Cows' Milk.—An editorial in the Archives of Pediatrics[5] for the month of November, 1914, is worth notice. It records that what is known as "grade B milk" was sold at 6 cents, that is threepence a quart. "Why is it possible," it proceeds, "that now a respectable bottled milk con be obtained where, and for what price, a most disreputable loose milk was once obtained?" The answer is interesting, and should strengthen the hand of those who are advocating municipal control of the milk supplies of our large towns.

New York has a Health Department wise enough to formulate, and strong enough to enforce, regulations which will ensure that no milk from tuberculous cattle, and no milk having more than 10,000 bacteria to the c.cm. shall be sold in the city; that all other milk shall be Pasteurized, and that no milk containing more than 2,000,000 bacteria to the c.cm., even in the hottest summer, shall be used at all for drinking purposes. The campaign for a clean milk began with the efforts of a few medical men who had recognized the necessity for reform, and formed themselves into a Medical commission.

The story of their efforts is too long to be set forth here, but in every large city of the United States their example has been followed, and, in spite of all difficulties, the result has been that it is possible to obtain in these cities a milk at once cleaner and cheaper than is the rule in this country. It is probable that the methods adopted, and crowned with such success, would have to be modified considerably in this country, but the lesson is that it is within the power of a strong and united medical profession to bring about a reform, provided they secure the support of the municipal authorities. Such a reform cannot, however, be obtained without an active campaign on the part of the medical profession.

In connection with the question of the milk supply, two interesting papers by Delepine[6] may be noticed. He reports to the Local Government Board on the effects of certain condensing and drying processes used in the preservation of milk upon its bacterial contents. Examination was made of milks prepared by three different processes, and, though the total number of organisms was considerably reduced, Delepine found that none was sterile. The organisms which resisted the processes were chiefly sporing bacilli of the B. mesentericus type. Tubercle bacilli also survived, but apparently in a condition in which their powers for evil were considerably diminished; at least, young rabbits fed with this milk did not contract tuberculosis, and the milk, when inoculated into guinea-pigs, produced a disease, the course of which was very much slower than that produced by the inoculation of untreated tuberculous milk.

Delepine's observations are of great value, since it has often been alleged that the introduction of the dried milk would solve the problem of milk-borne disease.

Delepine's[7] other paper deals generally with the question of the factor of tuberculous milk in the dissemination of tuberculosis Without entering into the question of the proportion of bovine to human infection, it is, we think, clear, from his careful summary of the methods adopted in Manchester, that the incidence of tuberculosis, especially in children, can be largely diminished by careful supervision of the milk supply. Even in Manchester, however, the proportion of tuberculous milk offered for sale is still, though much lower than in previous years, about 8 per cent to 9 per cent, and of course, it is probable that when the proportion is as low as this, the danger arising from the use of the mixed milk is not great, but it is obvious that a still higher standard should be the aim of the medical profession.

REFERENCES:

[1] Holt: Journ. Amer. Ass., 1914, p. 201.

[2] Downes: Ibid., p. 2019.

[3] Reuben: Archiv. of Pediatrics, November, 1914, p. 809.

[4] Coutts: Reports to the Local Government Board, 1914, New Series, No. 80.

[5] Archives of Pediatrics, November, 1914.

[6] Delepine: Reports to the Local Government Board, New Series, No. 97.

[7] Delepine: Journal of State Medicine, November-December, 1914.

TREATMENT OF ACUTE GASTRO-ENTERITIS IN CHILDREN.*

BY ERNST H. KOCH, M. D.
Louisville, Kentucky

Acute enteric infection being more prevalent during the summer season, I deemed it of interest to review the subject at this time. but will confine my remarks to the management of this affection.

One of the most important features is prophylaxis. The modern teaching of the laity concerning the care of milk and other articles of diet, as well as cleanliness in the general care-taking of the baby, has done much to prevent enteric infections, and I do not believe we now encounter as severe types as we did a few years ago.

The nursing bottle when emptied by the infant should be filled with saturated solution of sodium bicarbonate, allowed to stand for a few hours, then carefully washed inside and outside with a stiff brush. The nipples should be sterilized daily. The nurse or mother, after attending to the napkins of the infant, should carefully cleanse the hands before feeding the baby. The milk should be fresh, delivered for modification within a few hours after milking time, and placed on ice until used.

The nursings or feedings should be conducted at stated intervals, thus giving digestion the rest it should have. The practice of nursing or feeding an infant every time it cries should be condemned. If there is a residue in the nursing bottle it should not be utilized for a subsequent feeding. The daily bath is important. By attention to these details infection of the food and of the infant may be avoided.

---

*Read before the West End Medical Society, of Louisville, Ky., September 14, 1915.

With breast fed infants prophylaxis is just as important. Washing the mother's nipples with a saturated solution of boric acid before and after nursing is advisable. The baby should not be allowed to nurse a fissured nipple. The milk is removed from the breast with a pump and an attempt made to heal the nipple. If there is caking of the breast, this should be remedied before the infant is permitted to nurse.

An abundance of fresh air and frequent bathing are indicated in these infants the same as in the bottle fed. So soon as the infant shows signs of even a mild dyspepsia, or gastroenteric infection, the milk should be discontinued, a simple cathartic given, and the infant kept for twenty-four hours on a solution of egg albumen. Mild vomiting, i. e., once or twice, calls for no actual treatment and will disappear when milk is discontinued. After free defecation has occurred, if there be no exacerbation of the symptoms, feeding may be resumed and continued. In this way a severe illness can usually be averted. If the food is unsuitable and causes signs of dyspepsia, such as colic, etc., it should be changed else severer symptoms may result.

If in spite of these precautions an attack supervene, the patient should be treated along the following lines: (1) the food is discontinued and another of safe character substituted; (2) the toxines are eliminated and the strength of the patient supported by the so-called mechanical methods; (3) drugs are used to abate the symptoms and support the strength of the patient.

The milk, whether of the breast or bottle, is discontinued, the infant is given albumen solution, beef juice (expressed) or barley water, and I have sometimes used liquid peptonoids or panopepton. A baby can be kept on these mixtures for days without reducing the strength. Liebig's soup mixture, devised by Keller, has lately been highly recommended, especially for older children who refuse the mixtures already mentioned.

The cathartic given at the onset should be castor oil, or calomel if there is much vomiting. If the vomiting is not severe and the patient is under treatment from the onset, gastric lavage is unnecessary, as it oftentimes happens that vomiting ceases so soon as food is discontinued. If, however, vomiting persists after twenty-four hours, gastric lavage is indicated; as a rule it ceases after one irrigation of the stomach.

The diarrhoea is controlled by irrigation of the lower intestinal tract. The rectum and lower bowel are irrigated in those cases in which diarrhoea is persistent and becomes progressively worse. By using normal saline solution the benefit is two-fold; it removes any residue of feces that may have collected in the rectum and lower intestine and stimulates peristalsis, thereby favoring evacuation from above; it also stimulates the heart and adds to the body an amonnt of fluid to compensate for the drain caused by the diarrhoea. The enemata are given under a pressure obtained by an elevation of at most two feet from the bed. A temperature of 107 degrees to 110 degrees Fahrenheit is the best and most stimulating. Fully a quart may be used in half pint portions, allowing the first to return with the intestinal contents. The water may sometimes escape alongside the tube; this is a rather favorable sign as it demonstrates the contractile power of intestine and the abdominal walls. Only two enemata daily are necessary in severe cases. As the diarrhoea and other symptoms subside the number may be reduced to one, and finally be discontinued entirely as the infant further improves.

In exceptional cases rectal irrigations are followed after a few days' use by discharges of blood and mucus with aggravation of the tenesmus. Under such circumstances it is advisable to reduce the number to one every other day, or should the symptoms persist, to discontinue them entirely in order to determine whether the discharges are due to therapy or the disease. Hypodermoclysis is indicated only in those cases in which the course of the disease has been rapid and the prostration extreme.

In all cases with or without elevation of temperature, the benefit from warm baths cannot be overestimated. In case of great prostration a bath at temperature of 108 degrees Fahrenheit for five minutes is stimulating to the nerve centers and there is an apparent reduction in the effects of the toxemia. If the patient's temperature rises above 103 degrees Fahrenheit, sponging with water at about 80 degrees Fahrenheit is all that is needed, repeated not oftener than every three hours.

Alcohol is now prescribed less often than in former years, as experience has taught us that there is a special intolerance of the stomach and of the economy to alcohol in these cases. Infants after taking it for twenty-four hours will become stupid, apathetic and exhibit a constant retching if they do not vomit. This appears to be due more to the effects of the alcohol locally (on the stomach) and systemically than to the toxemia of the disease. It is, therefore, only advisable in severe cases in small doses and at short intervals.

Strychnine is useful and may be given in doses of 1-300 grain to an infant of six months, or 1-200 to older children, every three hours. Atropine recently advised as a cardiac stimulant is of questionable value; 1-150 grain has given rise to convulsions and twitching. I do not employ it; camphor water has been more serviceable. If the vomiting is constant, resorcin, 1-8 grain every three hours, is a safe and useful remedy. Bismuth subcarbonate is the best drug to allay the vomiting and tenesmus of the bowel. Two or three grains can be given every two or three hours.

Opium in any form has fallen into disuse. In severe cases it may increase the prostration and is dangerous. In milder cases small doses of the camphorated tincture or wine may be used when necessary to control colicky pains. Salol in 1-2 grain doses every three hours in combination with bismuth usually controls pain and diarrhoea. Colic is often relieved by a small enema; passing of the rectal tube rarely benefits this condition.

As the symptoms improve care should be observed not to return to a milk diet too quickly. Diluted milk is advisable, as it is better borne by the enfeebled digestion of the infant at this time.

Whatever methods are employed in the treatment, it is necessary to avoid the error of over-treatment. It should be remembered that hours of rest do more good than hours of treatment. Three hour intervals between the application of remedial measures, fresh air in the room, and a few hours' sojourn in the open with absolute quietude, are of the greatest value in these cases

HYGIENE AND THE PREVENTION OF DEFECTS IN CHILDREN BEFORE AND AFTER SCHOOL AGE

BY J. J. HANNA, M.D.
Quanah, Texas

Mr. Chairman and Gentlemen of the Panhandle District Medical Association:

During the last few years preventive medicine has been coming more and more to the attention of thinking people, being talked and written of both by the lay and medical world, but the subject is of so much importance and so large, that I have no apology for appearing before you with the above caption. Before coming to my subject, there are two or three things I want to mention, not directly connected with the subject as outlined, and still bearing in some measure upon it indirectly. The first of these is breast feeding of infants by their mothers

We, as physicians, know all too well how often a little one is put on artificial food, with the ostensible excuse that the mother's milk is not sufficient in quantity, or does not agree with the baby, when the real reason is that it interferes with the mother's social affairs or she is afraid that, by nursing the baby her mammary glands will become atrophied, or offers some similar inadequate excuse. There is not the difference now in the artificial and the breast fed infants, that there was a few years ago, owing to our increased knowledge of feeding, but even now the difference is enormous, and the mothers need to be educated along this line. I have the confidence in our American women, to feel that when they get the proper conception of this question they will attend to the rest, and it is therefore up to the medical profession to see that they are educated.

Another question demanding the attention of our people and in which the doctors must take the lead, is consanguineous marriages. If each of you gentlemen present will for a moment cast your minds back over the feeble-minded, the idiots and imbeciles met with during your practice, coming about as results of such unions, you will realize the need of some action along this line. As the matter now stands, even first cousins are not prohibited from marrying in Texas. If

---

*Read before the Panhandle District Medical Society at Amarillo, Texas.

the contracting parties to a marriage of this kind could realize the danger they are in, of being the parents of an idiot or hopeless imbecile, I think it would deter them from mating. This is another question needing education and also legislation. While on this train of thought, I desire to say that I think we owe it to our clientele to teach them that a healthy, well developed mate, is more apt to be a congeniel partner, and to be the parent of healthy, robust children. I think there is a tendency now to over develop the mind, at the expense of the physical part. I am sure that a woman who can, and does, prepare palatable meals, bears and takes care of healthy children and who is physically able to mutually indulge in and enjoy, with her husband, a reasonable amount of sexual activity –though she may have only a moderate education—is a more satisfactory life partner and worth more to the family and community, than an over-educated, physically under-developed woman; and the same may be said of the man.

Again, Mr. Babcock, registrar of vital statistics, writes me that there was reported in 1912 in Texas 28,638 deaths; of this number perhaps twenty per cent. were really preventable. In this number, of course, would be placed tuberculosis, typhoid fever, the infectious diseases, errors from feeding, etc. For the two years ending August 31, 1912, the State Board of Health reported about 11,000 deaths of infants less than one year old. This is a sad commentary on our general hygienic conditions, and the medical profession in particular. The next four years contributed 5,000 deaths reported, and this, too, when a great many physicians do not report their vital statistics. This shows us what a field the student of preventive medicine has! Coming directly to our subject we will pass over the first three years of child life, (expecting this time to put us past the teething period), and come to the stage in child life when digestion for ordinary food is fairly well established. From this time on till the child is old enough to start to school the most frequent cause of ailment and hence things demanding our attention most, is largely due to errors of diet and infectious diseases. This is the classification of Bendix, of Berlin, in Pfaundler and Schlossman's new work on diseases of children. Perhaps the defect most common among young children is trouble with the teeth. There is an idea prevalent among the laity and to some extent among ourselves, that the milk teeth will be shed in a few years any way, and that a child need not really begin to care for its teeth until later. This is the reason the habit of cleaning the teeth properly shoud be acquired the first few years of life so that the habit will be established before the permanent teeth come in. The milk teeth play quite an important role in the development of permanent teeth, as well as having their own function to perform—hence the double necessity of caring for them. The teeth should have careful inspection at least twice a year and any beginning defect should be corrected in time. Most all of the hideous, irregular teeth we sometimes see could have been prevented by a capable man, if taken in time. As the permanent teeth are cut they should be watched, and if necessary, one or more of them extracted so that the remaining ones may have room to enter. This plan is much better in every way than an ugly, crowded set of teeth. Of the front teeth, the eye teeth should be especially conserved for attaching bridge work to later, if needed. If the milk teeth are pulled too early the dental arches do not expand sufficiently for the permanent teeth, then we have crowding. My dentist friends tell me that the sixth molar is the one most often sacrificed of any of the permanent teeth, for the reason that it appears before the milk teeth are shed and is frequently thought to be one of the deciduous teeth, and therefore allowed to become decayed; or is extracted for some trifling trouble, under the impression that it will be replaced later on.

The teeth play an important part in digestion, and upon the proper digestion and assimilation of our food hinge our general nutrition, hence the importance of close supervision over any process that enters into digestion. Right here I want to get this thought forcibly impressed on our minds—that any deviation from the normal standard is to be looked on as a defect, whether it manifests itself a blindness, deafness, deformity, or merely as flabbiness, or that indefinite condition summed up as a delicate child. I want us to realize that the best guarantee against any one, or all of these conditions combined, is in keeping the general health of the child up to par. Pfaundler and Schlossman comment on the lowered nutrition found in children during the school age, and emphasize the necessity of close supevision by the family physician, as the start for the day's duties. The Germans segregate their weakly, anemic and poorly developed, and by more exercise, feeding, sunshine, and outdoor life, bring them to a better condition. Any condition in our public schools that does not take into consideration the needs of the individual, needs looking into. Our teachers should have instruction concerning the more common defects—how to discover them, and the importance of their correction. They also need to know more about the proper heating of the school rooms, the amount and location of windows and postures of the child. The teacher should also take especial care in wet, cold weather, to see to it that the child does not sit with damp feet. These things are all covered to some extent in our public schools, but have never had quite the emphasis placed on them that they demand.

We will now consider some of the organs separately in connection with the defects they are most subject to, bearing in mind constantly the fact that the general condition should be kept up to standard as the best of all hygienic measures.

The Heart. This organ is most frequently crippled in an organic way in connection with rheumatism, and unfortunately there is no connection between the violence of the rheumatic attack and the heart affection, but an apparently trivial attack of rheumatism may be followed by severe valvular trouble. Tonsilitis, with or without rheumatic complications, may be the forerunner of endo- or pericarditis. The prevention of these conditions is obvious—treat the predisposing cause.

Disease of the lungs is best prevented by seeing to it that there is normal breathing, both as to lung capacity and the air passages. Next to defective teeth I am sure diseased tonsils is the most common defect encountered. This question alone is worth more time than I can devote to the entire paper. Not only is the diseased tonsil itself a source of trouble, but it leads to ear and nasal difficulties, and it is also doubtless the port of entry in quite a lot of systemic infections. Diseased tonsils should be removed in all cases where they are permanently enlarged, or subject to recurrent acute attacks. Th fear of operative procedure and the failure to realize the immense benefit derived from the operation deters too many from having it done. I do not believe in an indiscriminate removal of tonsils, but I do think that twenty-five per cent. or more of the children in this country would be benefited by a complete tonsillectomy. What is said of the tonsils obtains also in a large degree in adenoids, particularly where obstruction is a factor in the pathology.

The ears should come in for consideration. Early in childhood "risings in the head," as they are denominated by the laity, are very common, and by many are considered as almost an indispensable, or at least an unavoidable part of child raising. And while it is true that there is perhaps no plan of preventive treatment that would prevent all, nevertheless, closer attention to the hygiene of the throat would prevent many cases. However, the main thought I wish to emphasize is that all cases of acute otitis media purulenta should be closely treated till they are well. Most cases of this character will yield to treatment if taken in time, whereas if neglected till a large part of the tympanic membrane has disappeared and the ossicles have become affected, the condition becomes a formidable one, apt to last into adulthood and later proves of significance enough to cause rejection for life insurance by the insurance companies. Likewise cases of deafness, though of but moderate severity, demand careful attention, for if not looked after closely, they may result in permanent impairment of the most useful special sense of hearing. Most all non-suppurative cases will yield readily to treatment. In childhood we find throat diseases, or obstructions as the most important factor in ear diseases, and their correction is the first step in ear treatment. Nasal obstruction needs careful examination and correction for two principal reasons—to insure proper nasal breathing, and to prevent ear complications later.

Of the eyes I wish to say that they demand particular attention at this period. All cases of crosseyes need careful refraction just as early as the squint manifests itself. By so doing in most instances the defect will be overcome and both eyes developed, whereas if we wait till the child starts to school or later we are apt to find the vision much reduced in the deviating eye—so much so in fact that it may then be impossible to develop binocular vision, and the treatment becomes operative. I believe strongly in medical inspection of school children and the proper treatment of diseases found. There is still entertained a great amount of prejudice against children wearing glasses, and this the public needs to be educated away from. The correction of refractive errors will often relieve headache and other unpleasant complications and allow the child's progress to be improved. Trachoma, of course, needs to be discovered early so that other cases will be prevented

All apparently dull children need close medical examination to see if there is not some physical defect that may be removed, and if found, corrected. Each child has an inherent right to demand (if it is possible for it to have) the proper exercise of its normal faculties—to see, to hear, to measure up to normal standards, and grow into healthful adulthood, going out into the world at least with the inheritance of a sound body and normal mind; and no amount of prejudice on the part of ignorant relatives, nor poverty, should prevent them from having their rights in this respect. Our great commonwealth should guarantee this to all; and it is up to us physicians. I repeat, in a large measure to see that proper education is given along needed lines.

SOCIETY TRANSACTIONS

AMERICAN PEDIATRIC SOCIETY

Twenty-seventh Annual Meeting

Lakewood, N. J., May 24-26, 1915

Energy-Metabolism of a Two-months-old Child Fed on a Prolonged Protein-rich Diet—Dr. Raymond Hoobler, Detroit, Mich.: Protein retained for growth causes no increase in metabolism That oxidized doses cause an increase in metabolism, varying with the amount oxidized. The cause of this increased metabolism of protein is the stimulation produced by the amino acids and their products derived from protein decomposition When large amounts of protein are fed, with insufficient carbohydrate and fat, even though ample calories to cover the caloric need may have been given, there is a drain on the fat and carbohydrate stored in the body. Protein food, though greatly in excess, cannot be substituted for needed fat and carbohydrate. The proportion fed, as advised and taught, is much in excess of the need.

DISCUSSION ON DR. HOOBLER'S PAPER.

Dr. Howland: This work is interesting as showing the deleteriousness of high protein. Other studies have not shown a positively bad effect from this. In some work I did, I was able to show that protein not only produces an excess of heat, by being itself consumed, it being impossible to store more than a certain amount of it in the body; but that it also acts as a stimulant to general metabolism. Here it is plainly shown that while there is not a protein to be consumed, there is a consumption of fat and glycogen stored in the body, which is the evidence of an injurious effect. The injurious effect of other things, particularly the carbohydrate and fats, are shown in a negative balance of the mineral metabolism. I have made some unpubished observations in children taking large amounts of protein. A large amount of breast milk was given, and the mineral metabolism, studied in two or three periods, was always positive. There was a retention of calcium, phosphorus, chlorine, etc. Then the same food was given with a large amount of nutrose added. Despite this, and despite the excess of phosphoric and sulphuric acids thus produced, there was still maintained a positive mineral balance; so that chemically it was impossible to show that twenty grams of protein a day had an injurious effect. Therefore, this work of Dr. Hoobler's is interesting in that it shows scientifically that protein in large amount is deleterious.

Dr Talbot: I am much interested in this report of Dr. Hoobler's. It is a curious fact that when protein is increased in raw cow's milk, as it was in an instance in which we studied the metabolism, the symptoms, the visible symptoms of protein indigestion become apparent much sooner than when other forms of protein are added. I did not know why that should be. I tried to repeat this piece of investigation, and found that when we got the protein up to four per cent., the baby had symptoms of indigestion. The period in which we expected to get the most striking results was, of course, lost.

I should like to ask Dr. Hoobler how he explains the figures here. Am I right in assuming that these were all on the same milk?

Dr. Hoobler: Yes, sir.

Dr. Talbot: I should like to know how Dr. Hoobler explains why there should be a difference of fifty per cent. in the baby's metabolism on the same food, if the baby was absolutely quiet.

Dr. Hoobler, closing: There were a great many other points that could not be brought out at all; and they cannot be, except after a long and careful study of work of this kind.

To answer specifically, as well as I can, I might say that in nearly all the estimations by hours, it is the experience that the first hour is a low hour for metabolism; the second, higher and the third hour, still higher. Why we should have the low metabolism, lower than that for the sleeping hours, I do not know; unless it is that it takes that length of time for the amino-acids of the protein to become split, and that then, as a stimulant, they are at their height.

A Further Step in the Adaptation of an Artificial Food to Human Milk—(By Drs. H. J. Gernstenberger, H. D. Haskins, H. H. McGregor and H. O. Ruh, Cleveland, Ohio.)

Dr H. J. Gerstenberger, Cleveland, Ohio: There is a means of eliminating the low volatile fatty acids, for the homogenizer makes it possible to mix this fat with other constituents of the food in the form in which it exists in breast milk, and add any other thing that further investigation may develop, thus affording a practical method of getting much closer to securing for the great bulk of children in the cities a food that needs no dilution and can be fed to a young infant, as well as to an older one. The bacterial content is very low. The food is cheap, and will probably prove of great value to the general practitioner.

Homogenized Olive Oil Fat-free Milk-mixtures in Cases of Difficult Feeding—Dr. Maynard Ladd, Boston, Mass.: Foreign milk usually contains a much higher percentage of fat than foods given in its place. This fact led to experimentation with other foods. By homogenizing, we are able, in cases of intolerance to cow's fat, to combine these foods with skimmed milk and produce a perfect emulsion. We can combine chemically pure casein with pure oils and pure sugars. My experiments thus far justify me in believing that in this way a food can be obtained that can be given with great improvement to the health of the patients. Olive oil combined with fat-free milk might be of great value, for olive oil costs only about one-fourth as much as cream. I have had success with this method of feeding in one or two very difficult cases, but my experience has not yet been sufficient to warrant me in drawing conclusions.

Dr. Coit: I should like to ask Dr. Gerstenberger whether he is able to tell us how the caloric value of this mixture compares with human milk?

Dr. Gerstenberger, answering Dr. Coit: We only determined the caloric value of two portions of this milk, in order to check up the chemical analysis of the fat quantitatively.

Dr. Hoobler: There has been some work recently done in connection with this matter of mixed foods, by Roller and Davis. (?) They have shown that there are two types of fats, those that go to form glandular tissue, and those that do not. Cocoanut oil, cotton-seed oil, tallow, etc., belong to the latter type. They have carried out some careful feeding experiments, and have found that animals are not sufficiently or properly nourished on non-gandular fats; but that when glandular fats are added to their diet, nutrition takes place in excellent condition. Their point is that there may be ncrease in weight with a diet containing non-glandular fats, but not true nutrition. They require further evidence of true nutrition than mere increase in weight. They base their requirements on the ability of the individual so nourished to produce normal offspring. They have shown that animals fed on these non-glandular fats are unable to produce normal offspring. With this knowledge at hand, we should at least inquire definitely whether foods such as have been suggested here are clearly fulfilling, in every degree, the standard of nourishment which we wish the children to secure.

Dr. Gerstenberger, closing: I should like to add that, of course, we realized, in making our mixture, in view of the work of Osborne and Mendel, that we should not get a gain in weight when we used lard. Osborne and Mendel found, in their work with rats, that these animals would not gain in weight with the use of lard; but that if different fats were employed, the rats would gain in weight. In Osborne and Mendel's work, the sweet almond oil would not get the rats to gain in weight. Therefore, children must be different from rats in this respect; or perhaps the fat in the buttermilk caused the infants to gain. The children have not vomited, except for a slight spitting up, and have gained in weight. The time is too short to speak further about them.

The Total Non-protein Nitrogen and the Urea of the Blood, and the Phenolsulphonaphthalein Excretion in Infancy and Childhood—(By Drs. Wilder Tileston and Charles W. Comfort, New Haven, Conn.

Dr. Wilder Tileston, New Haven, Conn.: The phenolsulphonaphthalein excretion is somewhat higher in children than it is in adults, and the non-protein nitrogen and the urea both show less tendency to increase in disease. The practical importance of this lies in the direction of prognosis and treatment. It is an important guide to the diet in nephritis, such as is found in scarlet fever. If the nitrogen is high, it is necessary to restrict the diet; but if one finds normal nitrogen, it is possible to allow more latitude in the diet. From analogy to adults, it seems probable that rising nitrogen will indicate some danger of uremia.

Dr. Morse: Dr. Hale and I have just started some work on the phthalein excretion, and also blood nitrogen and salt excretion, in children, in health and with nephritis. We have not got very far, but have found the same result as Dr. Tileston; that is, that the phthalein excretion is higher in health in children than in adults. We have also found, in a number of cases of nephritis, the phthalein excretion very little interfered with; and probably it will not be of as much use for prognosis in nephritis in children as in adults.

Dr. Freeman: We have had a series of phthalein experiments made, in some of which the children passed as much as ninety per cent. in two hours. One child with severe nephritis passed only three per cent. in two hours. He has practically recovered. He still has albumin in his urine, but is practically well. Such a recovery would scarcely occur in an adult with as low an excretion as that.

Dr. Koplik: A low phthalein excretion is not inconsistent with complete recovery. In the last six months, we have been making phthalein tests on nephritis cases and healthy children. We find that there may be a severe nephritis and quite a good phthalein excretion, i. e., sixty-five per cent. in two hours. On the other hand, there may be a very low excretion of phthalein--thirty per cent.—in a case of pyelitis, in a very severely ill child; yet the child may recover completely. If the phthalein excretion runs low in children, this fact is not of such serious significance as to exclude complete recovery; but the phthalein test should be made in all cases of children suffering with nephritis—before a surgical operation is undertaken, especially, we should investigate the phthalein excretion. One case of decapsulation that I had proves this. I am sorry that we did not take the phthalein test in that case. As it was, the child went into uremia immediately after the operation. If we had made the test, it might have protected the child from operation. She might then have weathered the gale, and we might have been able to operate successfully later.

Dr. Tileston, closing: In answer to Dr. Freeman, I would say that last year I saw a case in an adult in which the excretion was zero; yet she recovered. The phthalein test gives only the function of the kidney at the time the test is made; and there may be a total suspension of function compatible with complete recovery.

We had a case of acute retention in obstruction, which went up to 150 mgm.; but the patient, an adult, recovered.

The Society of Physicians and Surgeons of Louisville, Ky.

Diagnosis and Frequency of Thrombosis of the Lateral Sinus.—By James Royden Peabody, M.D.

DISCUSSION

Dr S. G. Dabney: I have enjoyed Dr. Peabody's paper and believe it will result in a great deal of good. Everyone who has heard the paper or who reads it when published, will be reminded that when they encounter patients with suppurative otitis or who give a history of recent ear suppuration, with great irregularity in the temperature range, particularly if there have been sweating and chills, sinus thrombosis should be suspected.

In regard to the frequency of sinus thrombosis: Of course frequency is a more or less relative term. It must be infrequent if we mean how often it occurs in patients with suppurating ears, because the vast majority of acute ear suppurations get well without complications if properly treated. It is also a common experience that a large percentage of chronic ear suppurations apparently recover without any distressing results. On the other hand, the proportion in which sinus thrombosis occurs where there exist the symptoms which the essayist has described, and which have oftentimes been diagnosed as malaria or typhoid fever, is probably a large one. I believe that point is well taken, and where such symptoms are present sinus thrombosis should be suspected.

My experience with sinus thrombosis is limited to four cases. It so happens by coincidence that twelve years ago today I was operated upon for appendicitis, and a medical student was in the hospital about the same time with acute otitis media. His convalescence was slow, and after the expiration of three weeks he began to have fever. One of the physicians in attendance believed he had typhoid fever, and I thought so too for a time. What induced me to doubt correctness of the diagnosis was the feature which Dr. Peabody has emphasized, viz., the tremendous sudden rise and fall in the temperature. A few days later it was noted that abscesses had developed about his ankles and wrists. I did not operate upon him as I had expected to do, because the surgeon operated upon me about that time. I presume the majority of you are familiar with the story of Senator Roscoe Conkling and Dr. Agnew. Mr. Conkling had acute otitis media followed by severe mastoiditis. It was during the blizzard of 1888, and as all traffic was temporarily suspended, Mr. Conkling had to walk about a mile in a blinding snow storm.

The disease rapidly progressed and conditions were such that immediate operation was imperative. The operation was performed and Senator Conkling died. A few days later Dr. Agnew was operated upon for appendicitis and also died! Remembering this story I concluded to postpone the mastoid operation! I am glad to say that the young man recovered. I have always thought he had thrombosis of the lateral sinus. While this is one of the cases in which recovery occurred without operation, I do not believe we can be certain of our diagnosis in all instances unless confirmed by operation.

The second case was unfortunate, and I have always blamed myself for the outcome. A girl of seventeen presented a vague history of chronic ear disease, and an acute suppuration developed without symptoms excepting fever. There were no chills and no sweating, but after a few days she had some swelling of the ankles. She was under the care of a trained nurse of unusual intelligence, who said the girl had suffered two or three previous attacks of rheumatism with swollen joints and high fever, which threw me off my guard. For several days I thought the trouble might be due to rheumatism. However, I operated upon her a little later and found an exceedingly large thrombus in the lateral sinus. She died within thirty-six hours from septicemia. Possibly her life might have been saved had the operation been performed earlier.

In the third case I was assisted by Dr. Peabody. The patient was a boy brought here from the country. He was extremely ill and had been treated for malaria several weeks. The boy presented the classical group of symptoms, his temperature ranged from 105 degrees to 97 degrees Fahrenheit the same day, with marked sweating and severe chills. He is the only one of the four patients having this typical group of symptoms When we opened the mastoid Dr. Peabody will recall the odor was horrible, the entire wall of the lateral sinus was necrosed. The jugular vein was ligated by a general surgeon. we thoroughly curetted the sinus, and for some time it appeared that the boy would recover. He lived five weeks, and sometimes for a day or two he seemed in excellent physical condition, but death finally ensued; and without presuming to know positively, I believe he died from endocarditis which we know sometimes follows in such cases.

The fourth case was one of the greatest disappointments that has occurred in my private practice. A little girl of five years in February, 1914, had acute suppuration of the right ear followed by mastoiditis, which is not uncommon. I did an ordinary mastoid operation, and she made an excellent recovery. She went home and remained perfectly well for some time, then suddenly developed sore throat with elevation of temperature. I was suspicious of scarlet fever, but the physician in attendance was doubtful. About three weeks later this girl had acute nephritis and coma, but finally made a perfect recovery. During December, 1914, the left ear became involved, and I was asked to see her again. I found that suppuration had already occurred, and advised that she be kept in the house a few days and carefully watched. Three days later there developed some tenderness over the mastoid, and I immediately sent her to the hospital. At that time there were no characteristic symptoms, either elevation of temperature, chills or sweating, but she had complained of headache from time to time. We opened the mastoid, Dr. Peabody assisted me in this operation also, and found a small quantity of pus. There was no perisinus abscess in this case, at least we did not discover any, and the lateral sinus was not exposed as there was no reason to suspect anything wrong with it. A few days afterward the child's temperature range was from 106 degrees to 97 degrees Fahrenheit, but there occurred no marked chills and no sweating. She had at one time a slight chilliness, but no distinct rigors. The diagnosis of sinus thrombosis which was made at this time was based purely upon the temperature range, which I believe is a safe guide in such cases. The lateral sinus was then opened and it was a beautiful scientific demonstration of thrombosis. It was a rather spectacular case in that when the sinus was exposed and proper compression made the clot was immediately extruded. I sent the clot to Dr. F. S. Graves at the Louisville Public Hospital thinking he might wish to make some bacteriological investigations, but he said it was such a typical specimen from a microscopical standpoint that he desired to preserve it intact. The little girl had no untoward symptoms whatsoever and left the hospital about four weeks after the operation. Subsequently, however, she again complained of headache, and it became necessary to call the family physician to give her relief. There were no other symptoms for some time, but the patient then complained that the headache was more intense, she became apathetic, convergence of the right eye was noted and it was perfectly plain that she had an intra-cranial lesion, probably an abscess. Dr. John J. Moren saw her at that time and agreed in the diagnosis of cerebral abscess. We outlined the matter frankly and fully to the family, but they would not consent to any further operative treatment. The little girl died within the next few days

The foregoing are all the cases of sinus thrombosis that I can recall having seen, excepting one at the Louisville Public Hospital. The latter was an extreme case and the patient had been treated some time for malaria. Based upon my experience and what I have read on the subject, I think it would be a mistake, particularly in children, to wait for the development of chills and sweating before making the diagnosis of sinus thrombosis. Chills may be entirely absent or so slight as to be readily overlooked, and sweating may not be present; both may be absent.

Another misleading and astonishing feature to me is, how well all these patients appear between attacks. It would be almost impossible for the physician who sees the patient in the interval between the periods of septic absorption, with the temperature about normal and no other symptoms present, to realize how exceedingly ill the patient may become during the next few hours.

I can recall many cases of peri-sinus abscess, and all the patients recovered; such cases are not uncommon. Two of the cases of lateral sinus thrombosis coming under my observation did not have perisinus abscess. I do not believe the little girl had a peri-sinus abscess. I still think sinus thrombosis is rare, when compared with the large number of suppurative ear cases that come under our observation; but in that group where there are serious complications, as stated by the essayist so frequently diagnosed as typhoid fever, pneumonia, malaria, rheumatism, etc., perhaps thrombosis occurs in a very large proportion

Dr. I. Lederman: The paper presented by Dr. Peabody is especially valuable to us because we need to be occasionally reminded that serious complications may occur in any case of suppurative ear disease.

In his clinical work on diseases of the ear Macuen divides sinus thrombosis into three classes: First, mild cases in which the temperature and pulse are but slightly affected, and where there are no other definite symptoms. It is difficult to arrive at a positive diagnosis in this stage unless local symptoms are present. which he describes as edema and tenderness over the mastoid and in the neck along the jugular. My experience has been that these symptoms do not develop early, therefore in this first or mild class I do not see how anyone can make the diagnosis. Second, in which there are chills and fever, the patient presenting the picture of pyemia. Third, merely the second class with symptoms more pronounced, greater absorption and probable complications, such as metastasis, etc.

You will recall that the older pathologists recognized that there might occur an aseptic clot. By this is meant an aseptic clot within the sinus, which might later become septic, due to irritation of the sinus wall, mechanical interference with the blood current, or to some chemical change in the blood. I do not know whether such a condition is recognized, but my experience in two cases suggests the correctness of the theory

Dr. Dabney mentioned the frequncy with which cases of peri-sinus abscess are encountered; we see this with startling regularity in our mastoid operations; it is not a serious complication. There is no way of pre-diagnosing peri-sinus abscess. I will cite two cases briefly. One was a young girl who several years ago presented typical symptoms of typhoid fever. There was marked congestion of the optic disc, what I considered beginning choked disc. She had chronic otitis media with an acute exacerbation. A radical mastoid operation was performed. From the external signs it seemed uncertain whether there was anything wrong with the sinus, but upon exposure it was found bathed in pus. The patient took the anesthetic badly, and it was thought advisable to place her in bed and await developments, opening the sinus later if necessary. I did not consider it wise to open the sinus at the time nor to try and determine with an hypodermic needle whether it contained fluid. The girl made an uninterrupted recovery and no further surgery was required. A small fistula persisted which she never allowed me to close. She came from the country to see me a few days ago. She has married and is now the picture of good health.

In another case a man past middle age had chills and sweats and all the indications of mastoiditis. There were no evidences of sinus thrombosis excepting chills, sweating and fever. Operation revealed a very hard (sclerosed) mastoid. There was no history of chronic ear suppuration. In this case also there existed an extensive peri-sinus abscess, but the sinus itself was normal. He made a good recovery. It is a question whether in this case there was not absorption of pus through the sinus wall. Although we may not accept Politzer's "osteoporotic theory" yet it is believed absorption may sometimes take place through the bone. At any rate the thought occurs to us, when we see a patient with septic temperature and having only a peri-sinus abscess, that absorption might occur through the sinus wall. And that is my reason for referring to the old theory of an aseptic clot which takes care of itself after the source of irritation has been removed; if not removed then infection sooner or later occurs and we have a septic thrombus.

I have seen several cases of sinus thrombosis during the last few years. I was called by Dr. Leo Bloch to see a child who had sinus thrombosis in the advanced stage. There was no question about correctness of the diagnosis, and it was a case which today I would not operate upon. However, we operated upon the child and demonstrated the correctness of our diagnosis, but death occurred a few hours after the operation. In another case seen at the Louisville Public Hospital the patient also died following the operation. Both these cases were far advanced, and are merely cited in support of the statement made by Dr. Peabody concerning the importance of early diagnosis. Ballinger claims that taking the three stages Macuen mentions, if we operate in the first stage the prognosis is good; in the second stage the prognosis is fifty per cent recoveries; in the last stage the mortality is practically one hundred per cent.

In regard to the bacteriological investigations which have been made in sinus thrombosis: There has been a great deal written upon the subject within the last few years, especially by Libman and Oppenheimer, of New York, who have advanced the idea that the diagnosis can be made very early by studying the blood. Their writings indicate that it is possible to prediagnose a case of this kind, i.e., to state whether absorption has occurred through the sinus wall. Others have contradicted the views of Libman with reference to the value of bacteriological findings, and his optimistic ideas are not accepted by all pathologists much less all clinicians. I desire to emphasize the caution Dr. Peabody has mentioned, that in every case where the diagnosis seems uncertain, you should investigate the ear conditions.

I recently saw a patient who was at the time practically moribund and nothing could be done for him. He had suddenly fallen unconscious on the street and was carried to his home. The family physician saw him shortly thereafter and recognized it as an "ear case from the odor," and asked me to see the patient with him. In the meantime he had been taken to the hospital and as he then had well-marked purulent meningitis we decided that nothing could be done. Necropsy revealed a basilar meningitis on one side with complete thrombosis of the lateral sinus, not only of the sigmoid portion but extending backward over the torcular Herophili and to the jugular On the other side the sinus was clear, but he had well-marked pachymeningitis with adhesions to the cortex, showing an old process which had merely assumed an acute form. The man was middle aged and had always been healthy; he was a milkman by occupation and was in the act of delivering milk when suddenly stricken. There had been no symptoms at any time, and according to the history obtained from the family his ears had never received any attention. I think it was a rather remarkable finding.

One clinical picture in sinus thrombosis mentioned by Dr. Dabney deserves emphasis, and that is the marked remission of symptoms During the period when fever is absent the patients usually feel well, and excepting in advanced cases they do not even complain of headache. Persistent headache usually means that the condition is far advanced, and I am always fearful of meningeal involvement.

In a case which occurred in the practice of Dr. S. J. Meyers, a child had an acute middle ear abscess without unusual features and received prompt attention. Lobar pneumonia developed and pursued a typical course. Ten days later there was another rise in temperature without chills, sweating or other symptoms indicating mastoid involvement, and the rise in temperature was attributed to the pulmonary lesions. The middle ear suppuration had been uncomplicated and presented absolutely nothing unusual. The drum membrane had healed perfectly. After a period of ten days, during which there were no symptoms, there occurred a slight rise in temperature and within seventy-two hours the child presented a perfect picture of purulent meningitis and died. Of course, we do not know whether the infection in this case occurred through the ear or in some other way, but the probability is there was a septic thrombus and infection from the middle ear, without any of the characteristic symptoms.

Dr. Irvin Abell: I do not feel competent to discuss the question of thrombosis of the lateral sinus. I have seen two undoubted cases, and one of doubtful diagnosis, through the courtesy of one of the ear specialists of this city. We will all derive benefit from having our attention directed to the characteristic symptoms of septic thrombosis in any portion of the body. I am aware of but one type of venous thrombosis which is not of serious import, and that is metastatic thrombosis of the leg veins. Patients so afflicted practically all recover, although the lesion may be painful and sometimes prolonged.

Septic thrombosis in other portions of the body induce symptoms similar to those described by Dr. Peabody as occurring in thrombosis of the lateral sinus. My experience in thrombosis cases has been unfavorable, whether occurring about the abdomen or the extremities. Particularly has this been true in cases following appendicitis where thrombi have occurred in the portal system. These cases pursue the same course, high fever, irregular chills, the temperature then subsiding to normal, profuse sweating, etc., and present practically the same clinical picture as do cases of lateral sinus thrombosis. They also harmonize as to the local and general symptoms which are presented. The general symptoms, according to my observation, have been out of all proportion to the local subjective and objective manifestations.

In regard to the diagnosis—at least in general venous infections about different parts of the body—rarely have we been able to demonstrate the germ in the blood. I think it would be a mistake, however, for anyone to say there was not a venous thrombosis of the lateral sinus, or in fact any other venous trunk of the body, simply because he could not find the bacteria in the blood. Of course they can be found in the majority of instances by careful and repeated examinations, and by taking specimens of blood from different veins. The blood picture is also typical, there is high leucocytosis, a tremendous increase in the polynuclear count, with diminution of the esinophiles. The presence of a suppurative focus, and the typical symptoms as described by Dr. Peabody, will always justify the conclusion that you are dealing with venous thrombosis.

Dr. J. B. Richardson, Jr.: I wish Dr. Peabody would tell us in closing the proportion of patients with thrombosis of the lateral sinus who recover without operation, and the proportion who recover with operation. I have been associated in five proven cases of sinus thrombosis, and these five patients all died. The majority of the other gentlemen who have observed such cases report that the patients have practically all died. If some of these patients recover without operation, it would seem the height of wisdom to let them alone!

In regard to the question of treatment: I believe the jugular vein should be ligated before the clot is removed. I have seen one case where the clot was removed, and the vessel ligated afterward. If there is danger of a detached particle entering the circulation, it would be lessened by ligating the vessel before removing the clot.

Dr. S. J. Meyers: With reference to the patient Dr. Lederman mentioned as having been observed in my practice: Several of the gentlemen who also saw this case did not believe it was one of lateral sinus thrombosis. Is it possible, or has it been the clinical experience of any of the specialists in this line of work, that a lateral sinus thrombosis may occur without any evidence of ear suppuration? Of course there must be a focus somewhere, and I recognize that it is usually in the ear.

My reason for asking the question is that I have just left the bedside of a baby sixteen months old who has a temperature of 105 degrees Fahrenheit. I have seen that baby daily for eleven days. This morning its temperature was normal, tonight it is 105 degrees Fahrenheit; in an hour or two it may again have a perfectly normal temperature, and two hours later it may be 104 degrees Fahrenheit or above. The urine has been examined and nothing abnormal found. Blood examination for the plasmodium malariae negative. Therapeutic measures directed toward the cure of malaria have been without benefit. The Widal reaction is negative. There have been slight chills but no sweating. While I have noticed that the child occasionally puts its hand to the ear, there have been no symptoms indicating suppuration or other lesion of the ear, and I have wondered if it is possible to have a lateral sinus thrombosis without the focus being in the ear

Dr. J. H. Simpson: I have enjoyed Dr. Peabody's paper and am sure it will be of value to us all. I think sinus thrombosis is of infrequent occurrence, at least that has been my experience in both private and hospital practice. On account of the confusion in diagnosis we do not often see these cases early, they are diagnosed and treated as typhoid fever, pneumonia, rheumatism, etc. The reason the patients do not recover is because metastasis has already occurred, disintegration and dissemination of the clot, pus formation, etc. I have encountered a great many cases of peri-sinus abscess. In the few cases of lateral sinus thrombosis that I have seen the patients have all died.

Dr. G. A Robertson: There is one interesting feature about this discussion, and that is the essential need that the general practitioner shall take into consideration whether the ear is involved or has been involved in abscess formation in every case of typhoid fever, pneumonia, scarlet fever, etc. I think there is an increasing demand that men in general practice shall know more and more about the specialties. Accuracy in diagnosis of general diseases and complications, especially those of a septic nature, cannot be too strongly emphasized in connection with lesions such as the essayist has described.

Dr. J. R. Peabody: I invited Dr. Dabney to be present at this meeting because it was he who stated when I first came here that I had an exaggerated idea about the frequency of lateral sinus thrombosis. I have been in private work only two years, and have seen five cases. Dr. G. C. Hall has operated upon five cases.

In answer to Dr. Richardson's question: There are no statistics to show how many patients recover with or without operation. In Dr. Hall's series of five cases there were two deaths and three recoveries. In one of the cases reported by Dr. Dabney which resulted fatally, the diagnosis was made very late The patient had been treated a month for malaria, and had no chance of recovery. In the case of the little girl, the diagnosis was made promptly. She recovered from the operation and left the hospital perfectly well. The cerebral abscess developed several weeks later. In the last edition of his book Dr. Dench reports forty-eight cases in which the diagnosis was made early. Of these twelve died. The case I quoted from the American Medical Journal recovered despite the development of metastatic abscesses.

Referring to the remarks of Dr. Abell: I do not believe it possible to always find bacteria in the blood. In one of the cases I mentioned repeated blood cultures were made, after ten days the streptococcus was found, and it was then decided to operate.

I do not concede that I have an exaggerated idea as to the frequency of sinus thrombosis. We all know how frequently suppurating ears are encountered, and any of them may be complicated by sinus thrombosis. There is no case of chronic or acute suppurating ear which may not at any time have this intra-cranial complication, and I believe we should always be on the lookout for it. The mistakes in diagnosis made by general practitioners have not hitherto been accorded sufficient consideration by us.

Dr. Dabney mentioned a case of thrombosis at the Louisville Public Hospital: That man had been treated several weeks for malaria. He was practically moribund when admitted, and died the next morning after operation with demonstration of the clot. It was not a theoretical diagnosis, we operated and removed a large clot, but the patient died on account of the lateness of the diagnosis.

In answer to Dr. Meyer's question: I mentioned in the paper that the ear trouble may have ceased some time before the development of sinus thrombosis. While I believe it possible to have a lateral sinus thrombosis without observable evidence of ear disease, such cases must be exceedingly rare.

West End Medical Society, Louisville, Ky.

Treatment of Acute Gastro-Enteritis in Children.—By Ernst H. Koch, M.D.

DISCUSSION.

Dr. W. A. Onderdonk: All the cases of acute gastroenteritis in children that have come under my personal observation during the last year or two have been the result of feeding condensed milk. I believe this is one of the most prolific causes of gastro-enteric disturbances in children.

In regard to bottle fed babies: I always advise the mother to procure what is known as the "sanitary nursing bottle," which has a wide mouth and large nipple, both of which are easily sterilized and kept clean.

I wish to endorse everything the essayist has said concerning the treatment.

Dr. C. L. Nichols: Theoretically the management of acute gastro-enteritis would appear to be a very simple proposition, i. e., to eliminate the cause by thoroughly emptying the gastro-intestinal tract, and then feed the child nothing which will cause further irritation. This is easy to say, but exceedingly difficult of accomplishment in many cases. I believe in most instances the trouble is that we cannot get a food which will be properly digested and assimilated.

In the treatment of gastro-enteritis in children I have had excellent results from the administration of tablets containing Bulgarian bacilli. I first give a child a month or two old half a tablet, and if no improvement is noted the dose is repeated.

I think the best laxative for children is castor oil, and I have seldom had to resort to anything else.

Dr. H. L. Read: I recently read an article by Hesse describing an apparatus which he uses in hospitals for administering water to young children with gastro-enteritis and other disorders attended by fever. It is similar to Murphy's device for introducing water into the rectum by the drop method, excepting that the tube has a nipple affixed to the end upon which the baby sucks. The amount of water can be regulated and as many drops as desired be given per minute The apparatus is so arranged that if the nipple happens to slip from the baby's mouth it drops into a pan and the nurse or mother simply replaces it. When the child is seriously ill and has a high temperature thirst is exceedingly annoying, and the administration of the requisite quantity of water by means of a spoon is unsatisfactory. It occurred to me that the method outlined by Hesse might be decidedly advantageous, as in this way the child may be given as much water as desired.

I endorse practically everything the essayist has said.

Dr J. B Lukins: I have used Bulgarian bacillus tablets rather extensively in connection with other remedies in the treatment of gastro-enteritis in children during the last two years, and while I have secured splendid results I am not sure they were altogether due to the administration of these tablets. We now see much less gastro-enteritis than formerly.

The best substitute for milk that I have found is veal broth. This seems to afford the child adequate nourishment, it does not disturb the stomach and is easily digested.

Dr. E. H. Koch (closing): I appreciate what has been said by the gentlemen in discussing my imperfect paper. It is quite probable that the so-called catarrhal vaccine might be advantageously used in cases of gastro-enteritis where severe catarrhal symptoms were present, and Bulgarian bacillus tablets may also be useful where indicated.

The reason we see less gastro-enteric infection now than formerly is because of the excellent work being done by the health department in connection with water and milk supplies. It is a matter of education and sanitation; the people are being taught how to take care of milk; they no longer allow it to stand on the window sill in the sun for several hours and then feed it to young infants! I have known ignorant mothers to feed their babies milk that had become curdled, and then wonder why they became ill!

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Nutritive Value of Proprietary Infant Foods.—R. Wheeler (Amer. Jour Dis. Child., 1915, ix, 300) finds that mixtures of milk and Eskay's Albuminized Food sustain normal growth in albino mice provided the milk furnishes 94 per cent. of the mixture as fed (66 per cent. of solid nutrients). The lack of growth on Eskay's Food without milk appears to be due to two factors: (1) inadequacy of the proteins to satisfy the nutritive requirements for growth in mice, and (2) absence from this preparation of some accessory substance or substances essential to growth. Eskay's Food in milk mixtures, as when fed without milk, produces in mice soft stools and sometimes diarrhea. Mixtures of Mellin's Food and milk also sustain normal growth in mice. Here, too, the milk serves two purposes: to supplement inadequate proteins and to supply essential accessory food substances. A mixture of 93 per cent. Mellin's Food and 7 per cent. purified casein is adequate for long-continued maintenance, but not for growth; 2 c.c. of milk added to the daily ration (4 g.m.) of this mixture, makes a food which sustains entirely normal growth in mice. Here, milk furnishes 5.8 per cent (including casein, 7.2 per cent.) of the total solids of the diet. The feces on a diet of Mellin's Food mixtures were always comparatively hard and dry. A mixture of fresh milk and 6.5 per cent. sucrose also sustained entirely normal growth in young mice. From an economic standpoint at least, this fact deserves consideration.

Schick Toxin Reaction for Immunity in Diphtheria.—J. A. Kolmer and E. L Moshage (Amer. Jour. Dis. Child., 1915, ix, 189) report their results in over 1.200 cases. They find that the toxin skin reaction is a valuable and reliable method for detecting susceptibility to diphtheria. Persons reacting negatively to this test usually contain at least one-twentieth unit of diphtheria antitoxin per cubic centimeter of serum, and this amount of antitoxin is probably sufficient to protect against infection Persons reacting weakly or strongly positive usually contain less than one-fortieth of a unit of antitoxin per cubic centimeter of serum or none at all. These persons may be regarded as susceptible to diphtheria and in the event of exposure to infection should be passively immunized with an injection of antitoxin. About 40 to 50 per cent. of children ranging from one to fifteen years of age react positively to the toxin test; this means that the preliminary use of the toxin test will eliminate the necessity of administering prophylactic doses of antitoxin to about 50 per cent. of children. The toxin reaction indicates that the immunity conferred by an injecion of antitoxin begins to disappear after ten days and has generally passed away entirely after four weeks. The increased susceptibility of persons with scarlet fever to diphtheria is shown by the toxin reaction; even after the injection of antitoxin about 10 per cent. are susceptible within ten days. According to the toxin reaction the immunity conferred by an attack of diphtheria is usually of short duration or entirely absent. The most practical application of the toxin reaction consists in applying the test as a preliminary measure to all persons who have been exposed to diphtheria and immunizing only those who react positively.

Bee-stings and Bee-poison as a Therapeutic Measure in Chronic Rheumatism of Children.—Joseph Langer (Jahrbuch f. Kinderheil., March 8, 1915) says that the pediatrist seldom encounters chronic rheumatism in children, in whom the acute form is most frequent. One sees centrifugal and centripetal forms of chronic rheumatism of deforming type, rarely with heart complications. The joint lesions are always symmetrical, which favors the theory of a trophoneurosis. The joints and surrounding tissues are swollen, stiff, almost paralytic, shining and tender. Pain prevents active and passive movements of the joints. Such children are entirely helpless. The etiology of this disease is not settled. The therapy includes all sorts of general medication, which goes to show that we are dealing with a fault of metabolism at present not understood. The writer gives histories of three cases treated by him with bee-poison. The treatment is exceedingly painful and is therefore seldom applied to children. But Turc and his followers have formulated a regular system of treatment by this method. It is carried out for long periods and large numbers of bees are applied to the same patient at one treatment, as many as 150 bee-stings being received at one sitting. The points of the stings appear after a few days as points of necrosis with a wall of leukocytes built around them. Injection into the conjunctival sac causes swelling of lids ,closure, hyperemia, chemosis and purulent exudation. The bee-sting is a slightly diffusible poison causing inflammatory swelling. It acts as a counterirritant to the tissues beneath it. The thickening of the circulation causes a carrying away of disease products and may kill the germs causing the disease. The bee-poison is also a bacteria-free secretion with the power of killing bacteria. The author obtained an extract of bee-poison by removing the sting and macerating in water. This he used in children as an injection, this method proving less painful than the beestings themselves. His conclusions are these: The bee treatment after Turc is very painful. The direct influence of bee-poison in rheumatism is doubtful. The claim of Turc that the reaction of the chronic rheumatic patient is different from the normal is established. That an immunity to bee-poison is established has not been proven by the author. The good effect of the poison on rheumatism seems unquestionable. In none of the author's cases was there any bad effect. The injection of the author's solution of bee-poison was not severely painful.

Anterior Poliomyelitis: A Review of the Recent Literature in Regard to the Epidemiology, Etiology, Modes of Transmission, Bacteriology and Pathology.—By James Warren Sever, M. D. Infantile Paralysis in Massachusetts, 1907-1912, pp. 3-47.

Brief reviews of 141 articles.

Orderly presentation of abstracts of numerous papers which have appeared in the past seven years serves to introduce the reader to subjects of experimental etiology, modes of transmission, bacteriology and pathology: and under epidemiology the writer summarized this section in the following way:

"It will be noted that the disease occurs in epidemics, is probably contagious, is controlled by quarantine, and can be carried probably by a third person." "The classical type is the predominant one, but meningeal and abortive cases are common. In epidemics there is a relatively high mortality, from 7 to 20 per cent. due to respiratory involvement. The onset is sudden, generally associated with fever, gastrointestinal disturbance and generally constipation. When the legs are affected there may be retention of urine. About 25 per cent. of the cases make complete recovery, but no one can tell which case is the one which is going to make such a recovery. Such recovery usually occurs rapidly, that is, in the course of the first six or eight weeks. The disease is one largely of the summer months, and attacks children between two and three years of age, although adults and elderly persons may become affected."—Amer. Jour. Ortho. Surg.

Early Development of Myositis Ossificans.—F. P. Weber and A. Compton (Brit. Jour. Child. Dis., 1914, xi, 497) reports a striking example of the commencement of myositis ossificans progressiva in a baby, the first signs of the disease having been almost, if not quite, congenital. The early diagnosis was due to the appearance of diffuse, hard, painless, transient lumps or swellings at various parts of the patient's body. The diagnosis of myositis ossificans progressiva was strongly confirmed by the presence of microdactylitis of the great toes and the thumbs. A bony spicule on the right side of the neck (possibly connected with the outer border of the clavicular origin of the sternocleidomastoid muscle), was already present when the child first came under observation at seven and a half months. The effect of traumatism as an occasional exciting cause of the local manifestation of the disease is illustrated in the present case by the occurrence of the first "lump" (i. e., a swelling on the left side of the neck) a few days after a slight fall on the left shoulder, and by the development of bony lumps at the site of an incision and at the site of fibrolysin injections. The disease appears in this case, as in other cases, to be due to a congenital, but not inherited, tendency to the formation of fibrous tissue and bone in striped muscles (that is to say, in the connective tissue normally belonging to the muscles), especially at the site of, and as a result of, traumata (even slight traumata) of various kinds. The present case also shows that the growth of the newly formed bone in myositis ossificans progressiva does not necessarily proceed from the periosteum, as it seems to do in cases of ordinary traumatic localized myositis ossificans ("rider's bone," etc.). A bony lump at the site of an incision into the vastus externus muscle of the right thigh developed quite far from any periosteum. The disease, which advances by repeated fits and starts, appears histologically to be an ossifying hyperplasia of the fasciae and connective tissue of the striped muscles, especially the muscles of the trunk. In the early stages of the disease, however, the muscular swellings constituting the exacerbations sometimes subside without the immediate occurrence of any local ossification at the site of the swellings.—A. J. of Obs. and Dis. Chil.

Chronic Articular Rheumatism in Children.—By J. Westmeyer. Jahrbuch fur Kinderheilkunde, Berlin, LXXXI, No. 1.

Westmeyer reports five cases of chronic rheumatism in young children. The disease began with more or less fever of a chronic type, with swelling of the glands of the neck. The point involvement began almost imperceptibly; gradually tumor-like swellings of the joints appeared which in three of the cases became so severe that there was spontaneous luxation of the hip. The site of election was the vertebrae of the neck and the large joints.

The course of the disease is chronic, extending over years, with fever and gradual increase in the joint symptoms. One case recovered from two attacks, but after the onset of a third attack the disease assumed the typical form. In two cases there was complete spontaneous recovery after the disease had persisted for several years; there was even spontaneous reposition of a dislocated hip.

Westmeyer says there can be no doubt that the condition is an infectious disease with the upper air passages as the probable port of entry. The heart is involved but less frequently than in acute articular rheumatism. The condition resembles acute articular rheumatism, and the difference in mode of onset and course of the two conditions is ascribed by Westmeyer to a different agent or difference in the resistance in the affected children. In all his cases this primary chronic joint rheumatism began before the age of five years. The ordinary antirheumatic measures are useless, and the best results are secured from hot baths of the joints followed by massage and active movements.—Amer. Jour. of Ortho. Surg.

Chronic Lymphatic Leukemia Treated with Benzol.—H. D. Rolleston (Brit. Jour. Child. Dis., 1915, xii, 33) record a case of lymphatic leukemia in a boy six and a half years old. The total leukocyte count was 60,000. On December 29, benzol treatment was commenced with an initial dose of m.vi per diem. On January 10 it was increased to m.xii per diem, and on January 25 to m.xiv. This dose was continued until February 12, when the benzol was stopped altogether. Progressive diminution in the total leukocyte count occurred during the treatment. The patient's general condition appeared to be greatly improved. The spleen remained practically unchanged in size, the glandular enlargement did not become less, and the patient did not put on weight satisfactorily. After the benzol was omitted from the treatment the leukocyte count was still taken weekly and at one time was as low as 2,900. About a week after the benzol had been stopped, a purpuric rash appeared on the forehead. On April 2 he was readmitted to hospital. The lymphatic glands were found to be distinctly harder and a trifle larger. The patient's general condition was decidedly worse. The total leukocyte count was 123,000, the small lymphocytes being the predominant cells present. Benzol m.ix per diem was again given, and in ten days' time the count had fallen to 15,000. This marked decrease was also accompanied by an improvement in his general condition. On April 16, the benzol was again omitted and on April 20, the leukocyte was found to be 20,000, and on April 30, 29,400. On May 11, a culture from the throat showed the presence of numerous diphtheria bacilli. The condition of the face suggested cancrum oris, and, though the stomatitis improved considerably under the local application of salvarsan, the child passed into a septicemic state and died on May 20. Blood examination showed a well marked leukopenia—1400 leukocytes on May 14 and 1600 on May 15.—A. J. of Obs. and Dis. Chil.

Pediatric and Orthopedic Surgery.—M. F. Porter. Indiana State Medical Journal, January, 1915.

Porter sums up the pediatric literature for 1914 in one word, "Prevention." Special note is made of the infant welfare work to be done under the Federal Children's Bureau, which received an apportionate of $165,000 for prenatal work; of the more general adoption by physicians of longer feedings at longer intervals and of the Shick reaction of diphtherias The use of vaccines in pertussis apparently has not been universally adopted although it has many advocates. The work of Dandy and Blackfan was reviewed showing the value of the dye test in differentiating between the obstructive and the communicative types of internal hydrocephalus, indicating operation for removal of the obstruction in the former type.

In Orthopedic Surgery the writer refers to Gillette's paper which advocated the abandonment of passive motion in joint disease; to Frasier's article in which the author thinks that the recovery of a completely paralyzed muscle is limited to one year, and to Bucholz's paper which points out that the exercise treatment of flat-foot cannot effect a cure. It also refers to Berndt's paper in which the author thinks that the chief hindrance to the restoration of the arch in flat-foot is not due to displacement of the bones, but to a contraction of the peroneus and Achilles tendons and of the ligaments on the outer side of the foot.

Lovett's article on backache is also reviewed in which the differentiation between the painful backs of static origin and those due to sacroiliac dislocation is emphasized. Lovett points out that if immobilization, strapping and belts give relief that they are in themselves evidence that sacroiliac relaxation does not exist.—E. B. Mumford, Indianapolis, Ind., A. J. of Ortho. Surg.

Infantile Scurvy.—A. F. Hess, Jl. A. M. A., finds that the pathology of infantile scurvy, including Barlow's classical account, is almost entirely devoted to a description of the lesion of the bones; little or no mention is made of the heart, the lungs and other internal organs. On the clinical side, attention focused on the evidence of hemorrhage—in the gums, beneath the periosteum, in the urine, etc.

In several instances, definite cardiac enlargement was ascertained by means of physical signs and Roentgen examination. Necropsies also show that the heart in some cases is hypertrophied and dilated. The examinations made during life, as well as those carried out after death, demonstrated that this enlargement was mainly of the right ventricle. Another symptom which should be accorded greater significance is edema, which is almost always present to some degree. This occurs early in the course of the disease and involves most frequently the eyelids. It is often manifested as a firm edema over the lower end of the tibia, infiltrating the skin, and is readily overlooked, as it does not pit on pressure. This extravasation, which is due to a nutritional disturbance of the smaller vessels, may also infiltrate the muscles. When this occurs in the thigh and causes swelling, it may be mistaken for the typical subperiosteal hemorrhage. It would also seem probable that the nerves are involved in infantile scurvy. The knee jerks are increased, and there are indications of superficial tenderness of the limbs and neuroedema of the optic disks. In the light of this symptomatology and pathology, infantile scurvy is supposed to assume actual relationship to beriberi, in which the right heart is also hypertrophied and the nerves invariably involved. This correlation is emphasized still further by a dietetic test modeled after the treatment of beriberi, which, as is well known, is brought about by a diet of polished rice which has been deprived of its pericarp, and is cured by the addition of rice polishings to the diet. In the author's study, the addition of middlings—the pericarp of the wheat—caused in many instances a prompt amelioration of the symptoms, although it did not suffice to cure the disorder. This indicates the advantage of giving a cereal which contains the outer layers of the grain when the diet includes no other antissorbutic food.

Some Phases of the Infantile Paralysis Problem.—By Chas. L. Washburne, M. D. Jour. of Mich. State Med. Society, 1915, XIV, pp. 179-182. Washburne says that fully 50 per cent. of all the deformities entering the Ann Arbor University Hospital are due to infantile paralysis. The histories of these cases brought out the fact that 50 per cent. of these were improperly diagnosed. He reviews briefly the etiology etc. The sporadic cases should be early and correctly diagnosed to prevent the epidemics and it is the general practitioner who should do this. Under treatment, rest is emphasized during the stage of neuritis and simple splints to prevent the development of deformities. If this splinting is carried out subsequent tenotomies, etc., will but rarely be needed. He calls attention to the fact that the federal government spends large sums for the prevention of disease in cattle, hogs, and horses but none, practically, for the prevention of such a scourge as poliomyelitis in people. Dr. Reuben Peterson, in the discussion, said that probably Congress cannot help itself. It has a certain power when it comes to marine service and interstate commerce, but these patients do not come under either of these departments of the government. Because cattle do, Congress can step in and has authority to stamp out diseases of cattle. It is not because the government is unwilling to spend the money but it has not the jurisdiction and the different states are very prone to resent anything on the part of Congress as regards their boards of health or efforts to stamp out epidemics unless special national aid is asked. —A. J. of Ortho. Surg.

The Child and the Community.—E. O. Otis, Med. Rec., points out that the community is beginning to realize that diseased and physically unfit men and women should not be allowed to marry and produce diseased and physically unfit children. In two states, at least, so-called eugenic marriage laws have been enacted. Both for the child's sake and for the sake of the community who have to care for the defectives such a law seems just and reasonable. It is a significant fact bearing upon this point, that the most important causes of infant mortality in New York City, as stated by Dr. Baker chief of the Division of Child Hygiene of the Department of Health, in 1913, are the so-called congenital, inherited diseases, the deaths from which diseases occurring during the first month of life, amount to 35 per cent. of the total deaths under one year. To ensure a healthy child, pre- and post-natal care and training of the prospective mother is essential, and in many communities this is now done in connection with the lying-in hospitals, or, as in Boston, by the Child Hygiene Department of the Board of Health and other private instrumentalities through visiting nurses who instruct the future mothers in personal hygiene, the general care of pregnancy, and in their own and their babies' care after confinement. The Caroline Rest Training School for Mothers, conducted by the New York Association for Improving the Condition of the Poor, is an excellent example of this kind of welfare work. After the child has graduated from its milk diet, the community has still a duty in seeing that it is provided with proper food. At school the child should be thoroughly examined from time to time for defects or diseases. Sixty-eight per cent. of the Boston school children have defects. The author tells of the Forsyth Dental Infirmary for Children which cost $800,000, and is endowed with $2,000,000 as an example of what should be done to protect the teeth of children. As most authorities now believe that the majority of cases of tuberculosis in adult life became infected in childhood, he points out the urgent need of combating this disease. He states that Hamburger has demonstrated that latent tuberculosis is present in 71 per cent. of children from seven to ten years of age. This fact should make the community realize its duty in providing proper playgrounds, open-air schools and even preventoria or places in the country. The author concludes by making a plea that the community offer the child means of spiritual development as well as to provide for its physical well being and its mental training. He can see no other way for providing religious instruction in a communal way except through the medium of the public school.

BOOK REVIEWS

Emergency Surgery—By John W. Sluss, A.M., M.D. Associate Professor of Surgery, Indiana University School of Medicine; Ex-Superintendent Indianapolis City Hospital; Surgeon to the City Hospital. Third Edition, Revised and Enlarged with 685 illustrations, some of which are printed in colors. Price, $4.00 net. P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia, publishers.

This handbook on Emergency Surgery is not intended primarily to instruct the leisure hour of the general practitioner, but to serve as a ready reference and guide out of uncertainty in a time of stress. The teaching and instruction found in this volume is concise, to the point and practical, and if some of the expressions and teachings appear dogmatic, we are sure the author's whole aim is to keep practical instruction rather than to appear dictatorial. In this revision the author has adhered closely to former editions to present general principles concisely, and practical details amply—in short to make a book useful to the general practitioner in the surgical phase of his daily work. The author has very carefully revised the text on Fractures which has been increased but only to meet the requirements of the advances in this special field in the past year. The chapter on Military Surgery has been entirely rewritten in conformity with the surgical experiences of the present European war. The technique of emergency interventions are in accordance with the best practice of the present time. It is a volume that we can cheerfully recommend to the student and busy practitioner.

Pediatrics, edited by Isaac A. Abt, M.D. Orthopedic Surgery, edited by John Ridlon, A.M., M.D., of Chicago, with the Collaboration of Charles A. Parker, M.D. This is Volume V of the Practical Medicine Series for the year 1915, brought out under the general editorial supervision of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School of Chicago. The price of this volume is $1.35. Price for the whole series of ten volumes. $10.00. The Year Book Publishers, 327 So. La Salle street, Chicago, Ill.

This work is practically a year book of everything new that has appeared within the past twelve months pertaining to Pediatrics and Orthopedic Surgery. This series of handbooks is published primarily for the general practitioner, at the same time the arrangements in several volumes enables those interested in special subjects to buy only the volumes that they desire. This little volume contains the newest and latest ideas pertaining to Diseases of the Newborn, Infant Feeding, Infant Mortality and Diseases to which the child is peculiarly susceptible. likewise in the Department on Orthopedic Surgery the latest and newest ideas are discussed on Joint Tuberculosis, Ankylosis of Spine, Scoliosis, Spondylolisthesis, Congenital Dislocation of the hip, Infantile Paralysis, etc.

It is a volume that we can commend to physicians whose work includes the attention to diseases of children.

Infant Health.—A manual for District Visitors, Nurses and Mothers, by J. (Shawnet) Cameron Macmillan, C.M.B., A.R., San. 1. Lecturer (First Class Diploma) Sick Nursing and Popular Health, Edinburgh. Inspector of Midwives and Health Visitor, Oxford, formerly senior Health Visitor, Aberdeen. Price, 75c. Published by The Oxford University Press, American Branch, No. 35 West 32nd street, New York City.

This excellent manual, full of sound knowledge and common sense, should be most helpful to district visitors and nurses, and could be put in the hands of intelligent mothers. It is not easy to give just the needed amount of information on health subjects, but Miss MacMillan has found the happy mean between a technical treatise and a popular handbook. Readers may like to know that the author is a woman of large experience both in Scotland and in this country. She has done splendid work for us in Oxford, and it gives the reviewer great pleasure to give a warm recommendation to this work.

Mother and Baby—By Anne B. Newton, M.D. Illustrated from Photographs Chosen by the Author. Net, $1.00. Postpaid, $1.10. Lothrop. Lee & Shepard Company, Boston, Publishers.

This book presents in plain language, free from technicalities, the main facts about maternity and infancy; dwelling largely upon the every-day aspect of the subject. It answers many questions constantly asked, but hitherto not generally answered outside of the regular medical books.

This work embraces the following: One chapter of counsel to mothers before the baby comes; eight chapters of advice concerning the baby; and two chapters devoted to the sick baby, giving the rules for some of the simpler remedies to be used before medical aid can be procured, and a dictary, with dishes for both well and sick babies. The author aims to impress upon parents the close relation between physical and moral health, and gives many suggestions in regard to securing the necessary proper balance between them. The amount of good which this modest book can do is incalculable.

Shahhuck's Parliamentary Answers—By Harriette R. Shattuck, Author of "Woman's Manual of Parliamentary Law," "Advanced Rules of Parliamentary Law." 16 mo. cloth. Price, net, 60c; postpaid, 70c. Lathrop, Lee & Shepard Company, Boston, Publishers.

Mrs. Shattuck is so widely recognized as this country's leading woman parliamentarian (it may well be doubted if she has her superior in either sex) that great interest attaches to anything she offers in this line. This neat book makes it possible for even a novice at presiding to rule promptly and accurately on any matter likely to come up in any meetings conducted under parliamentary law. Nothing equals the question-and-answer method for conveying workable information quickly, and in her concise replies to supposed questions, Mrs. Shattuck has earned the thanks of all who may be called to the chair in any gathering of women.

A Manual of Surgery.—By Francis T. Stewart, M.D., Professor of Clinical Surgery, Jefferson Medical College; Surgeon to the Germantown Hospital; Out-Patient Surgeon to the Pennsylvania Hospital. Fourth edition, with 580 illustrations. Handsome buckram binding, $4.00, net. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, Publishers.

This is one of the most handy and practical manuals of surgery that the reviewer has had an opportunity to examine. The author has produced a handy working manual stripped of verbage and unessentials which the medical practitioner who seeks a guide to present-day surgery may refer to without disappointment, and the undergraduate whose crowded hours demand in the present day curriculum, can refer to and find the essentials he seeks without waiting through long and wearisome articles on some surgical subject. It seems that the chief desire of the author has been to set down concisely and completely those facts which the student must know, and to make such suggestions in diagnosis and treatment as will aid the physician in his daily practice. In short, the work is practical and concise without being too brief, therefore, historical references and bibliographical data have been omitted and emphasis has been laid on those details which experience teaches to be of the greatest clinical importance.

In the present revision those portions of the text dealing with investigation of the patient, particularly by instrumental means, e.g., bronchoscopy, esophagoscopy, proctoscopy, raidography, etc., have been expanded. Important changes have been made in the articles on transfusion, hemorrhage, spinal puncture, colectomy, hernia, tumors of the hypothysis, and the surgery of the lung, the liver, the stomach, the spleen, and the breast. Among the new sections that have been added may be mentioned those on exclusion of the pylorus, sporotrichosis, the surgical aspects of purpura, esophagectomy, esophagoplasty, foreign bodies in the palm, infections of the hand, and those on the transplantation of fat, fascia, bone and veins. A number of the old illustrations have been discarded, a number of new ones inserted.

The arrangement of the manual is ideal and the illustrations, without being lavish have artistic merit, and add greatly to the illuminating of the text.

The Awakening of Woman, by Florence Guertin Tuttle. The Abingdon Press, New York and Cincinnati. Publication and Sales Department, 150 Fifth Avenue, New York. Price $1.00 net.

According to the author of this work, the European war instead of relegating the woman question to the background, has in reality forced it to the front. The work of Europe today is to a large degree being done by women. While the war is making widows and orphans, it appears also to be creating feminists of an advanced type. Feminism is an inner revolution before it is an outer revolt, subjective before objective. Arising from interior necessity it is but a symbol of a spiritual revolution sweeping the sisterhood of the earth. Any view less comprehensive than this spiritually inclusive view is superficial, therefore imperfect.

The woman's movement has been viewed from many angles. It has been seen as a sex problem, a domestic problem, an industrial problem and political problem, according to the insight or the bewilderment of the spectator. But the psychic awakening—the real cause of feminism—has been relatively overlooked, and the author undertakes in this work to press to their mental and spiritual sources the growing activities of women, and to indicate that the freeing of woman's creative energies, instead of being inimical to human progress, is in reality necessary to it. This is a very interesting and reading little volume and the chapters by reason of their charm and clearness of expression and freshness of thought which mark them, are well deserving of most careful consideration.

PEDIATRICS

Vol. XXVII NOVEMBER, 1915 No. 11

EDITORIAL

CARE OF THE MOUTH

Perhaps no part of the body is so often neglected as the mouth; especially is this noticeable in the case of children. A mother, who will religiously bathe her child and keep its body sweet and clean, will often fail to clean its mouth. A new-born infant should have its mouth washed after each feeding; a soft cloth wet in a weak solution of boracic acid should be used for this purpose If this were always done we should rarely find a case of infantile sore mouth.

After the teeth come and the mouth is large enough, a small soft brush should be used; the teeth and mouth should be thoroughly cleansed at least twice daily.

In illness, where sordes and mucus accumulate rapidly, and where the tongue is parched and stiff, attention is needed every hour; the mouth should be kept moist, and the same treatment carried out through the night as through the day. Boracic solution, listerine, lemon juice, glycerine, and distilled water are all refreshing and soften the tissues; where the lips are chapped or fissures appear, a lubricant of cold cream or sterilized vaseline should be applied. Where the gums are spongy or soft and bleed easily a few drops of tincture of myrrh added to pure water will help to harden them. Small squares of old linen or soft gauze should be used instead of a brush where one is ill or weak. These should immediately be burned after use.

Every part of the mouth should be cleansed; behind the wisdom teeth, the roof of the mouth, and under the tongue; lemon juice will remove the fur from a thickly coated tongue. Where the teeth are sensitive, the water used should be slightly warm.

TYPES OF NERVOUS DISEASE IN CHILDREN

An endogenous or inborn affection is one which is dependent on inherited weakness, deficient resisting power or faulty development of the nerve cells or nerve tract. Gowers speaks of this as a biotrophy. The nervous tissues wear out unduly early. There is a physiological premature senescence, slow and insidious in onset, inevitable and progressive in course and without retrocession. The child is doomed from the moment of conception. These diseases are independent of external influences, and are possibly dependent on consanguinity, alcoholism or various toxemias in the parents. They are racial and familial, occasionally sporadic. They are not always identical in different families and show family modifications of type. The changes are atropic or aplastic, without inflammation. Higher cells atrophy and lower tissues hypertrophy. The degeneration is localized in one system. Progressive bulbar palsy, primary cerebro-spinal sclerosis, neurotic family idiocy, Friederich's ataxia and muscular dystrophies are the main members of this group.

The exogenous diseases are those dependent on congenital syphilis, and possibly tuberculosis, and on post-natal causes, such as microbial infections, by the action of toxins or mechanical interference with circulation or nutrition. The organism may be present in the affected part as in meningitis; present in other parts as in diphtheria and tetanus, or undiscoverable as in infantile palsy. In certain conditions no morbid change or organism is found, e.g., tetany, insanity, hysteria. Poisons such as lead and alcohol are also causes. It is difficult to bring the effects of traumatism and circulatory affections, the results of embolism, thrombosis or hemorrhage, into this classification, except in so far as they are exogenous in origin.

CONSTIPATION IN INFANTS

Constipation is comparatively speaking very common in infants, more frequent by far, in fact, than is generally supposed. Likewise, the consequences of constipation in infants are much more grave than is usually recognized. Long continued constipation may lead to, and often does lead to, intestinal stasis and autointoxication. The poisoning of the system by the food waste products may result in death or may pave the way for serious conditions, or may so hinder the development of the child that his or her future physical and mental may be very greatly handicapped. Indeed, constipation in infancy is a menace of vast import, not only to the child itself but to the race.

As Pritchard has pointed out in his recent work on the nutrition and management of the infant, for reasons which are obvious the establishment of a habit of constipation is attended with dangers and inconveniences which are almost in inverse proportion to the age of the individual; therefore the younger the infant, the more important is it to prevent this disturbance of function. Constipation in infants, as a rule, can be referred either to interference with the mechanical locomotion of feces through the colon and sigmoid or to dislocation of the sensitive reflex of the rectum.

In infants constipation is largely induced by errors of diet, although other factors such as stigmata of degeneration, inco-ordination of various automatic nerve mechanisms and those which subserve the functions of defecation play their parts. It will be readily understood that if constipation in infants is so great a menace to health, that all feasible means should be employed to prevent the occurrence of and to cure the condition when established. Unfortunately, however, the methods frequently used with this object in view, not only do not attain the desired result but aggravate the situation. Purgatives are administered which while affording perhaps temporary relief. in the long run do more harm than good.

For instance, during the early days of life meconoium, designed to lubricate the mucous surface of the intestines and to offer a convenient medium of resistance to the peristaltic movements is sometimes violently expelled by a dose of castor oil and consequently an infinite amount of harm is wrought. Of course, the rational treatment of constipation in infants depends largely upon a correct diagnosis of the cause, but it may be stated with emphasis that the routine treatment of the condition by aperients, purgatives, enemata and suppositories is not a scientific method. The prevention of constipation is principally a question of diet and the proper management of feeding. The treatment of constipation does not consist in the administration of purgatives, perhaps, rather in their avoidance. If the bowels require to be relieved, pure liquid petroleum oil answers the purpose best. Its action is mechanical, it is lubricating and protective to the delicate epithelial lining of the infant's alimentary tract.

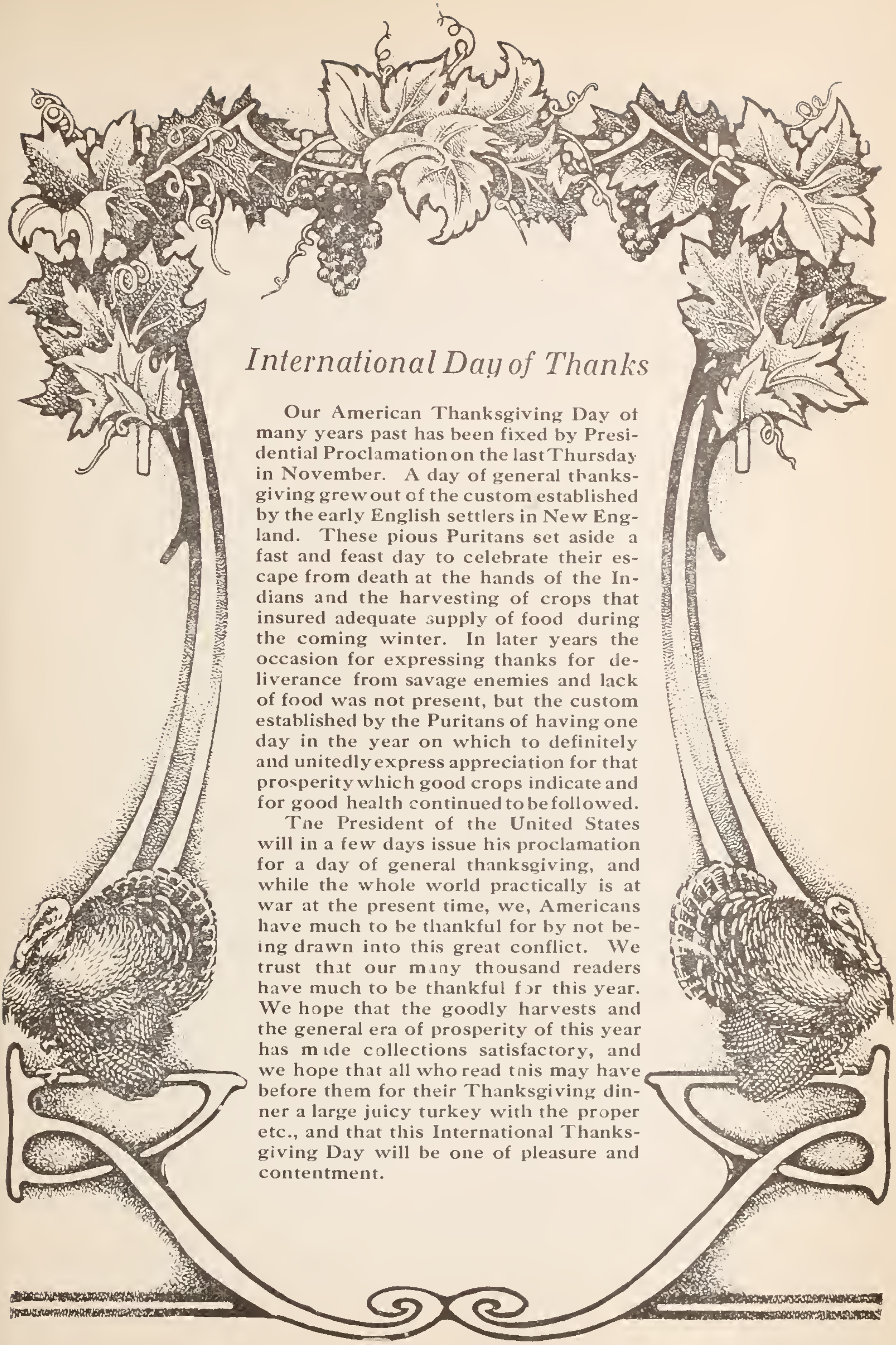
But as precaution is better than cure, means should be adopted to prevent constipation, the chief of which are judicious feeding at the proper time and in proper quantities.

THE MANAGEMENT OF INFANTS AT THE BREAST

It is obvious, and a matter beyond argument, that the best way in which to rear a child is by breast feeding in its very early life. It is useless to contend that any form of artificial feeding is equal to that supplied by human milk. Such contentions are merely a waste of breath. If then agreement is so unanimous as to the superiority of breast feeding, how does it come about that a large proportion of infants are brought up by hand The excuse for resorting to artificial feeding is either that the mother's milk is inadequate or unsuitable or that the infant possesses a defect which prevents it from suckling. This latter event is very rare and may be regarded as a negligible quantity The reason almost invariably given for neglect to provide the infant with its natural food is that the mother's milk supply is lacking or inadequate.

In nine cases out of ten when this plea is advanced, it is not really so, in fact, a complete absence of milk secretion does not occur Every mother secretes milk. It is known from experience and learned from actual practice that the establishment of a satisfactory supply of milk is dependent upon the vigorous and effective suction of the child, and in the regular and complete emptying of the breasts. If the infant fails to complete his task residual milk is allowed to accumulate in the breast, the amount secreted diminishes rapidly and the breast becomes stubborn and difficult. If the amount of milk is small, the endeavor must be made to find the cause which has interfered with the suction of the child.

However, it is enough at the outset to insist that delay in the establishment of the milk supply is due to some one of the causes which directly interfere with the proper suction of the infant. Formerly absence of an adequate supply of milk was looked upon as evidence of maternal idiosyncrasy. Now it is known with an absolute degree of certainty that the fault lies in a mechanical interference with the suction of the infant or if an idiosyncrasy does exist, that it is one of the child's and not of the mother.



International Day of Thanks

Our American Thanksgiving Day of many years past has been fixed by Presidential Proclamation on the last Thursday in November. A day of general thanksgiving grew out of the custom established by the early English settlers in New England. These pious Puritans set aside a fast and feast day to celebrate their escape from death at the hands of the Indians and the harvesting of crops that insured adequate supply of food during the coming winter. In later years the occasion for expressing thanks for deliverance from savage enemies and lack of food was not present, but the custom established by the Puritans of having one day in the year on which to definitely and unitedly express appreciation for that prosperity which good crops indicate and for good health continued to be followed.

The President of the United States will in a few days issue his proclamation for a day of general thanksgiving, and while the whole world practically is at war at the present time, we, Americans have much to be thankful for by not being drawn into this great conflict. We trust that our many thousand readers have much to be thankful for this year. We hope that the goodly harvests and the general era of prosperity of this year has made collections satisfactory, and we hope that all who read this may have before them for their Thanksgiving dinner a large juicy turkey with the proper etc., and that this International Thanksgiving Day will be one of pleasure and contentment.

PEDIATRICS

THE EVIL EFFECTS OF ARTIFICIAL FEEDING OF INFANTS, EXHIBITED IN AFTER LIFE, WITH REFERENCE TO THE INJURY DONE TO THE DUCTLESS GLANDS

By
J. Wallace Beveridge, M.D., and William E. Fitch, M.D.
New York City

The feeding of infants is rightly a subject of perennial interest and concern not only to the medical man but to the community at large. The success of a nation in any sphere of endeavor depends upon the qualities of its individual members. If these members are not physically and mentally fit, or, at any rate, a large proportion of them, the nation cannot continue to hold a high place but must inevitably fall into a second rate position. A race of feeble persons cannot produce strong men and women and therefore it is essential that not only should an infant be well born, that is, born of healthy parents, but should be well brought up, that is, properly nourished in infancy and childhood.

Upon the manner in which the child is reared hangs to a great extent the fate of the race and nation.

The question may then be asked, are infants reared as they ought to be reared in most civilized countries? and the answer must be an uncompromising no. Let us analyze then this matter.

A very large number of infants are reared by artificial means, which signifies that they are not fed on their only really natural food. human milk. They are brought up on substitutes. Cow's milk is, of course, the substitute most largely used. But cow's milk in its raw state cannot be assimilated by an infant and consequently it has to be modified in such a way that it resembles most closely mother's milk. Cow's milk can be so modified that on analysis it seems to be in most respects identical with human milk and yet it does not nourish the young child in a like satisfactory manner. It is lacking in some elusive constituents which render it less nutritive, these are probably the *vitamines* although up to the present this is more or less conjecture. In any event, cow's milk however treated is not the equal as food for infants of mother's milk. Again, cow's milk except at a cost so considerable as to put it out of the reach of the majority of people cannot be delivered in a sufficiently pure condition. It goes without saying that an infected or contaminated milk is not a safe food for the young Of course, this fact has been long recognized, with the consequence that measures have been evolved and put into practice to rid milk of hurtful germs which may have invaded it and to clean it. Hence came into vogue what is known as sterilization by boiling and partial sterilization by pasteurization. Sterilization by boiling is not effective inasmuch as while milk subjected to this process may be free from hurtful germs and comparatively clean, at the same time it has been robbed of much of its nutritive properties. Infants fed on such milk are apt to suffer from scurvy, rickets and so on. Thus sterilization has to a considerable degree, been placed out of court as a suitable food for infants.

Pasteurization is claimed by its advocates and these, it must be confessed are many, to be relatively free from the objections which can be urged against sterilization by boiling. It is said that most of the hurtful germs which are likely to infect milk are destroyed by pasteurization, and that its nutritive properties are but slightly impaired by the heat to which it has been subjected In short, it is asserted that milk properly pasteurized is safe and moreover that it is a nourishing food for infants. On the other hand, the opponents of pasteurization are of the opinion that although most of the disease conveying bacilli may be bereft of their powers for evil, the milk so treated is rid of a good deal of its nutritive properties and children fed therefrom are not unlikely to suffer from ailments proceeding from malnutrition.

On one point all authorities are agreed, namely, that pasteurization to be effective must be done properly. It is obvious that it is not always performed as it should be, and when such is the case it is just as obvious that milk not pasteurized scientifically is a grave menace to health. Mothers have been educated to believe that pasteurized milk is a satisfactory substitute for human milk and use it largely. When the process has been defective, it is easy to understand that disease may be spread far and wide by this means. One of the most serious charges that can be brought against the teaching that pasteurized milk is a good substitute for human milk is that mothers are so willing and ready to believe this statement that they will feed their young on it even though they may be well able to feed them at the breast. The widespread credence given to the assertions regarding pasteurization have given rise to and fostered a too great confidence in the value of the process.

Rather than urge a campaign in favor of pasteurized milk would it not be more rational to initiate a popular propaganda educating mothers and parents as to the benefits to be derived to the present generation and to generations to come from breast feeding. It is not to be denied that as the situation stands pasteurized milk has its value indeed in many instances, its use is essential, but after all, breast feeding is the natural way of rearing infants and it may also be said with emphasis that there is no substitute which will adequately and from all points of view fill its place. Pritchard has said in his work on the infant published a short time ago, that if one tithe of the human ingenuity, which of recent years has been lavished on the artificial method, had been bestowed on studying improvements in the breast feeding of infants, comparatively few infants would even now, in these so-called degenerate days, be relegated to the bottle. Pasteurization of milk then is but an alternative method for rearing an infant, a good enough method when properly done it is true, yet notwithstanding its merits, only an alternative method.

Breast feeding should be encouraged in every possible manner for as said before the future of the race hinges on the successful bringing up of a healthy, sturdy and mentally efficient and well balanced race of individuals. Stress should be laid on the undeniable fact that very many mothers who could feed their children do not and that if they were aware of the dangers involved in neglecting this their first duty they would make every effort to fulfill their most important maternal responsibility.

In after life the evil effects of bottle-feeding are too frequently markedly felt. The breast fed child, other things being equal, will develop into a healthy man or woman with a certainty that is absent from the development of one who has been artificially nourished. The puny man or woman, improperly developed in body, with an unstable nervous system is more often than not the result of artificial feeding when an infant.

Under normal conditions, as Starling and others have pointed out, the young animal is supplied through its natural food with all the food stuffs in the proportions which it requires for its normal nourishment and growth. It is impossible therefore satisfactorily to replace the natural milk of an animal by that of another species. In civilized communities it is becoming more and more the custom to endeavor to feed the child with cow's milk more or less modified in the vain attempt to reproduce the properties of human milk. Among all classes this involves the administering of a milk differing in its qualities and in the relative proportions of its proteins, its fats, carbohydrates, and salts, from human milk. So-called "humanized" milk then is only a rough imitation of the natural mother's milk. Among the poorer classes this mode of artificial feeding means the replacement of a natural sterile food, throwing very little work on the digestive organs of the child, with a foreign milk very difficult to digest, and often teeming with microorganisms. There is no doubt that, of the children dying during the first year of life, *four-fifths are murdered by this unnatural method of feeding.* This is somewhat of a reiteration of what has been said before, but as it embodies the written views of one of the greatest physiologists of the world and is in consonance with the opinions of the majority of physiologists it is worthy of quotation

The composition of human milk has been referred to previously and it was stated there that it was impossible to provide a milk, or to so modify cow's milk that it was exactly like mother's milk. A constituent is wanting or some constituents are wanting which cannot by any form of cow's milk modification be put into it. Sterilization of cow's milk at a temperature above 150 degrees F. destroys the vitamines.

It will not be therefore out of place to draw attention to the chief differences in composition between human milk and cow's milk. In human milk the caseinogen is not only absolutely but also relatively less than in cow's milk. Also the latter is relatively poorer in milk sugar. Human milk is poorer in salts, especially in lime, as it contains only one-sixth of the amount present in cow's milk. It is said, too, that human milk is poorer in citric acid. Furthermore, the caseinogen of human milk presents several points of difference from the caseinogen of cow's milk. Acid precipitates it less easily, coagulated by rennet it does not form a firm clot, but is thrown out in flocculent form. Consequently it is much more susceptible to the action of gastric juice. There are other slight differences. Moreover, human milk as a food for infants manifests its superiority in that it contains antitoxins. Erhlich demonstrated that when a female animal had been immunized against any toxin and had in consequence produced antitoxins in its blood, the said antitoxins would, if it bore young, pass into the milk. A similar passage of antitoxins into the milk had been proved in the case of various infective diseases. Thus it will be plainly evident that human milk will not only nourish the infant adequately, but will provide it to a certain extent with a passive degree of immunity against possible infection by diseases to which its species may be subject

Cow's milk cannot by any means be treated in such a manner that it is quite the same as human milk and it is idle to argue that any milk however modified, can be a thoroughly satisfactory substitute for the infant's natural food.

Bottle feeding and artificial feeding of infants generally is the most fruitful cause of malnutrition; malnutrition is responsible directly and indirectly for many diseases, ailments and conditions and is the greatest foe of proper development of both body and mind. It is not usually recognized that auto-intoxication is frequent with young children and that this form of systemic poisoning is brought about by improper or injudicious feeding. Uusuitable food causes constipation or bowel disorders, most frequently constipation, the prolonged retention of food material in the intestines produces alimentary toxemia, a vicious circle is established and all the organs and functions concerned with the digestive process, in fact all the organs and functions of the body suffer in unison. If normal development is checked and hindered by disordered metabolism due to improper food it stands to reason that the future life of the individual is seriously handicapped. As an adult he or she enters into the battle of life bearing a burden inflicted by the carelessness, or lack of knowledge of those responsible for the bringing up. The diseases, affections and conditions which are mainly owing to errors of diet when young manifest themselves in many ways. Perhaps the most conspicuous of these is rickets The disease is directly the result of injudicious feeding, bad hygiene and hereditary influence. Rickets is essentially a disease of civilization and most common in temperate climates. It is most frequent in cities in which the inhabitants are massed together under unsanitary conditions, when there is little sun, air, and not much room for exercise. It occurs among the children of the rich and among the poorest classes. It is no respecter of persons and although heredity may play a role in its causation, it is above all a disease of malnutrition. It occurs mostly among infants who are fed on sterilized milk, patent foods and raw milk, but it is largely absent among those who are breast fed. The descriptions of the physiological causation of rickets are so many and various as to be almost confusing. Stoeltzner has connected rickets with diseases of the adrenal bodies. He is authority for the statement that not only are the adrenals small in rickets, but also that they are deficient in adrenal. Pritchard is of the opinion that it is general disease of the entire system and not a disease of the bone alone. In short, a vicious cycle of events in which each individual link in the chain acts and reacts on the others. According to this point of view there are two pathological pivots on which the symptoms mainly hinge. The liver in the first instance may be damaged by faulty methods of feeding, from abuse of its functions, or from overwork, or it may be inherently or congenitally weak. In most cases there is indigestion with formation of toxic products, efforts on the part of the liver to oxidize or destroy these products, collapse or failure of the liver function with the escape of these unoxidized products into the general circulation, and ultimately poisoning of the nervous system itself. If this view be correct, and, at least, it sounds plausible, rickets is very largely a disease of disordered or defective digestion which results in auto-intoxication, and consequent malnutrition, and in the causation of this condition and of other conditions and diseases engendered by intestinal stasis with auto-intoxication as an outcome, the internal secretions play a prominent part. Rickets is referred to as although the most obvious, only one of the diseases which may be laid at the door of malnutrition of the young, there are many others which exert a profound influence on the after life of an individual and in which the internal secretions are largely concerned. It must be borne in mind that the digestion of food within the bowel requires for efficient action not only the special ferments secreted by the intestinal mucous membrane, but the co-operation of the other secretions provided by the liver and pancreas as well as of the other ductless glands. There exists an intimate relationship between all the ductless organs. For example, if the stomach does not furnish an adequate amount of acid the supply of "secretin" will be curtailed in proportion to the lowered acid supply and owing to this deminished secretion the activity of the pancreas itself will be injuriously affected. Again disordered metabolism due to improper feeding reacts in a sinister way on the thyroid gland and perhaps most cases of goitre could be traced to malnutrition in infancy and childhood

The relationship is more close than is usually imagined between the activity of one internal secretion and another aid in explaining the complicated nature of the conditions which determine the normal development or the reverse of the various organs concerned in digestion. In addition and this is a most important point, attention may be drawn with the utmost earnestness to the fact that an organ will not develop normally unless it be given opportunities for the normal exercise of its functions and there can be no such exercise of function without stimulation. These organs will in a manner of speaking atrophy, they will either fail to perform their allotted task adequately and efficiently or lose their functions, at any rate temporarily. Thus, if by reason of errors of diet in the young, bringing about lack of acid secretion, "secretin" fails to exert its stimulating effect on the pancreas, disordered metabolism will ensue the entire machinery ot the digestive and intestinal organs and functions will be thrown out of gear and the human engine will be damaged sometimes beyond hope of repair. The ductless glands of the body even those remote from the immediate scene of action will suffer to a greater or less degree and unless a rational mode of restoring the functions to the internal secretions directly concerned be instituted these glands may never regain their normal state. The proper development then of the digestive functions of the stomach and intestines is a matter of such supreme importance and upon this development hinges so greatly the future well-being of the individual and race, that the feeding of infants should be regarded as the paramount duty of the physician and of those in whom the care of the infant has been placed. Strong insistence must be urged with regard to the quite remarkable association and interdependence which exists between one organ and another, each link of the chain of the digestive processes depends on the preceding or succeeding link. A chain is as strong as its weakest link, and therefore to insure good health and what is more important yet, to provide for future good health, it is incumbent that all the links of the chain be sufficiently unyielding to successfully resist any pressure which in the ordinary course of events be brought upon them. If there be not reciprocal dependence of the various organs concerned in digestion, alike for stimulation to activity and for stimulation to growth and development, diseases are sure to occur and the effect on the after life cannot but be disastrous.

The enormous importance of pancreatic digestion is now beginning to be recognized in its true light. This subject has only been elucidated, that is to say partly elucidated, for we have very much to learn concerning the matter yet. Within the past few years, the chemistry of the proteid bodies, with which the functions of the pancreas are mostly concerned, has been investigated by many research workers, and a great deal of knowledge has been acquired. Owing to the brilliant work of Miescher, Kossel, Hofmeister and Emil Fischer, it is now known that the entire series of proteins, including albumins, globulins, caseins, albumoses and peptones, consist for the most part of amino-acids. During the first few days of life the gastric digestion of proteid bodies is extremely limited, indeed were it not for pancreatic and intestinal digestion at this period of life food would not be digested at all. Pancreatic digestion at this stage of development is absolutely essential and is almost as necessary in childhood and throughout life.

With reference to the amino-acids and metabolism, Professor L. F. Barker had this to say: "Since the proteins in the make up of each animal are specific, and since the food of the higher animals varies enormously in the character of its contained proteins, obviously some means must be provided for making the animal organism independent of the kind of protein food digested. In the process of digestion these means are found; the protein molecules are broken down in order to permit the feeding organism to use the fragments for the construction of entirely new protein complexes suitable to itself. If we consider, for example, the nutrition of infants, this fact becomes clear. Fed on milk alone the child's body has to utilize the milk proteins to build up the various proteins of different parts of the body. Professor Barker supplies with the paper from which this excerpt is taken a table by means of which the transformation which must take place when all these various proteins can be seen at a glance. In the young as in the adult when proteid bodies are absorbed into the circulation while being broken down into its component amino-acids by pancreatic digestion, these foreign proteids, if so absorbed can only act as foreign bodies, which are probably, as pointed out, a means of poisoning the system.

The effects of bottle feeding are shown in various ways and on the whole, the method may be stigmatized as being often irrational and unnecessary. The damage that it does to the ductless glands is frequently of so serious a nature as to render these glands less serviceable than they should be and sometimes impotent for good to a very large extent. As we have stated on many occasions, it is our firm belief that the adequate and smooth working of the internal secretions is a sine qua non of good health. When therefore by improper feeding, overfeeding or underfeeding in infancy and childhood, these secretions are injured, sometimes beyond repair, the future life of the man or woman is largely spoiled.

There is a point of which we should like to press the significance, namely of the frequency of constipation, intestinal stasis and alimentary toxemia in infancy and childhood. Under existing conditions of living constipation in infants and children is more common by far than was formerly the case and is almost invariably due to faulty feeding. The epithelial mucous lining of the alimentary tract of infants is necessarily very delicate, and liable to be easily abraded or even to be expelled wholly as the result of constipation and the employment of purgatives as remedial agents. When this occurs, it is not difficult to understand that proteid substances may become absorbed into the circulation and that a toxemia of the system may eventuate. The anatomical disabilities of the colon in infants further predispose it to constipation and these disabilities are complicated by the feebleness of the intrinsic muscles of the bowel thereby impeding the passage of its contents through the large intestine and to dislocation of the normal rectal reflex. Apart from these anatomical and nervous causes, many, in fact, the most frequent causes are directly due to feeding. Consequently if a young child is to be free from constipation, from auto-intoxication, he or she must first of all be fed on a food which it can assimilate and which is nourishing in the highest possible degree. This object, as a rule, can only be successfully attained by breast feeding All other methods are but makeshifts to be resorted to when human milk is unattainable.

In this paper the endeavor has been made to point out as clearly as may be some of the evil results of artificial feeding of infants, mainly from the standpoint of after life. Infant mortality and sickness in all civilized countries is appalling and much of this lamentable state of affairs is preventable. Race deterioration, which is in evidence in all countries, is owing to a degree not realized and which appears to be sounding the knell of some nations, to a lack of appreciation of the malign after consequences of faulty feeding of infants. To how great an extent the internal secretins are involved in this question cannot be explicitly stated. The study of these secretions, although progressing satisfactorily, is by no means exact. A good deal is known but much remains to be learned. Enough knowledge has been gathered on the subject to permit of the statement that the well being and welfare of the infant and the adult is inextricably bound up in the internal secretions. If one of these glands fail in its function, all suffer with it and the organs of the body will not work in the harmonious way which is a first requisite of good health. In order to keep the internal secretions at the proper rhythmical working pressure they must not be hindered or foiled in any respect. This end can be reached by so feeding the body and especially the body of the infant that it allows the ductless glands free action.

Reforms are urgently called for with regard to the feeding of infants. Too much dependence must not be placed on any form of artificial feeding be it by pasteurized milk or any other kind of artificial food. A warning should be sounded against the employment of condensed milk in particular, owing to its sweetness infants take to it with avidity, and they generally grow fat on it, but the fat is not a healthy fat and from nearly all points of view condensed milk is an undesirable food for infants.

Summarizing the conclusions reached in this paper:

Breast milk is the only really natural food for infants and is the sole food when obtained from a healthy woman that provides the necessary nutriment.

Pasteurized milk is the best substitute for human milk but even when modified to resemble human milk most closely is inferior in nutritive constituents to the natural food. Moreover, by spreading abroad the doctrine that pasteurized milk is an efficient substitute for human milk, the view is fostered among women that because it is so good a substitute they need not trouble to feed their children at the breast. A feeling of false confidence is established which is not borne out by facts.

Women should be educated in the knowledge that whenever possible infants should be breast fed.

The consequences of artificial feeding are exhibited not only on the infants themselves and the cause of an immense amount of mortality and sickness but is often a physical and mental handicap to all those who have been fed by these means in early childhood.

Exactly to what extent the internal secretions are involved in the question of the artificial feeding of infants is not known, but enough is known to state with a considerable amount of assurance that these secretions are injured and robbed of much of their powers for good by improper feeding in early childhood, and that their future functions are damaged to such an extent that the future of the artificially fed child is handicapped both from the physical and mental standpoints.

25 E 60th Street

THE MANAGEMENT OF BREAST FEEDING WITH CASE REPORTS*

BY C. K. JOHNSON, M.D.

Instructor in Pediatrics, University of Vermont
Burlington, Vermont

It would be presumptuous on my part to attempt to give this group of pediatricians many new points on breast feeding, but this is a subject of much interest to me, and I thought that this short paper, even if much was a restatement of old observations, might stimulate in yourselves and more especially through you the general practitioner and the laity a more keen appreciation of the value of breast feeding. Almost daily I see infants put on the bottle, when with a little tact and patience I believe many of them could have with much benefit remained at the breast fully or partly for some weeks longer.

One would judge from the numerous articles written on artificial feeding and the scarcity of them on breast feeding that everyone was supposed to know all about the natural method. In fact, do we not over-estimate our ability to adapt

*Read before the New England Pediatric Society, March 26, 1915, reprinted from Boston Medical and Surgical Journal, Aug. 19, 1915.

artificial food to infants? During my post-graduate work it has always seemed to me that breast feeding did not receive its deserved amount of time. Much depends upon the general practitioner and his attitude, as with him rests the responsibility of ascertaining sometime previous to the expected date of delivery that the breasts and nipples are in good condition, any sunken nipples receiving appropriate treatment at this time. He should also inquire as to the mother's habits, digestion, condition of the bowels, etc., as these all have an important bearing on successful nursing, and the prospective mother should be impressed with their importance.

I recently saw an infant, the first child, put on the bottle because of sunken nipples which could undoubtedly have been prepared for their natural function had the necessary precautions been taken earlier.

One frequently sees a mother try to nurse her infant for two or three weeks. Then the breast milk becomes deficient. This occurs because the mother is tired out by her new duties, from lack of sleep and by seeing her infant losing in weight. The mental attitude has an unfavorable influence on the milk secretion, and after a little time, of her own initiate or by the advice of a physician the infant is put on a bottle.

Dr. Griffith has well said that the adjustment of equilibrium between the mother's milk and the infant's digestion should be awaited and no haste made to give up the natural food until we are well satisfied that a change should be made.

Lucy Nash says that few mothers understand that the baby's cry during the first two or three days before the flow of milk becomes established is not a cry of hunger, but a natural process for the full expansion of the lungs. In consequence they become nervous and get into a nervous state which affects the milk supply unfavorably.

Very recently a mother told me that she wanted to nurse her infant, then six days old. She was giving the bottle four or five times a day until the breasts became active. The breast milk was slow in coming as might be expected. I advised that all artificial food be stopped and that the infant be put to the breast at regular intervals. A report three days later said that her breast supply was sufficient and that the infant was contented.

The breast milk is often said not to agree with the infant. Very frequently, however, the milk is not analyzed, and even if this is done it may be misleading owing to the method of obtaining the sample to be analyzed. I recall one case where the laboratory report said that the milk was very poor and insufficient to nourish any infant. The infant, however, remained at the breast and continued to thrive. I find that the majority of general practitioners do not appreciate the marked variation in fat percentages between the first and last milk obtained from the breast. My cases reported in this paper will show this variation. In one instance in a multipara I emptied one breast with a breast pump, saving the milk in four consecutive samples, the analysis of which follows:

	Fat.	Proteid.	Sugar.	Ash.	Total Solids.	Water
No. 1	2.23	.98	6.60	.17	9.98	90.02
No. 2	4.32	1.07	7.16	.19	12.74	87.26
No 3	6.84	1.03	5.50	.16	13.53	86.47
No 4	7.92	1.12	—	—	—	—

It is needless for me to mention the relation of infant mortality to breast feeding. It might, however, be wise for us as physicians to impress this point more fully upon the mother. I believe that most mothers who thoroughly understand the value of even two or three months of breast feeding to their infants would make every possible effort to perform this duty.

Frequently an infant is allowed to nurse too often and at irregular intervals, both of which are bad for mother and infant.

Dr. Fisher says that 90 per cent of poor mothers are able to nurse their infants, while only 17 per cent of rich mothers are able to do so. This may be correct but from my experience I think that he gives too great a difference between the two classes, the 17 per cent being too low.

Much has been written regarding the nursing mother's diet, and I believe that many physicians are inclined to restrict so much as to be a hardship for the mother. She gets to feel that this or that article of food is disturbing her infant and she becomes nervous in consequence.

I am inclined to allow a liberal diet, limiting only things known to disagree. I fully believe that the condition of the mother's nervous system is more important than her diet if that is reasonably good.

It has been said that a mother has an abundance of good milk and could nurse her infant, or that she has a scanty supply of poor milk and could not perform that duty.

Dr. McClanahan asks, Is there no middle ground between breast feeding and bottle feeding? He strongly advocates supplemental feeding in suitable cases.

I have even been criticized by physicians for trying to use supplemental feedings. I am, however, having good success with this method in many cases and feel that others would be well paid for their efforts along this line. I have today, at the time of this writing, seen a five-months infant, weighing 16 pounds and in excellent condition. The mother during the early weeks of nursing had very little breast milk, and her physician, a leading pediatrist, advised that the infant be put on the bottle. The mother, however, persisted with the breast feeding, the infant doing well. At three months one nursing was replaced with cow's milk. This is continued at present, the remaining feedings being from the breast.

This illustrates that it is not always possible to predict the functional activity of the breast.

The following cases are cited as representative of many in my files

Case 1 Male; one month of age; birth weight 8½ pounds; weight when seen at one month, 9¾ pounds; breast-fed; nursing at two-hour intervals. There had been slight vomiting from birth, but the main difficulty was persistent colic, with loose stools, 3 to 5 daily, containing many fat curds. The infant had considerable eczema about the face and shoulders. The mother had become discouraged and tired out from lack of sleep so that it had been decided to put the baby on the bottle. An analysis of the breast milk showed the fat in the sample taken before nursing to be 2.25 per cent, that taken after nursing 7 96 per cent. The mother was directed to nurse her infant every three hours, for five minutes, this to be preceded by one-half to one ounce of water. Within a short time all vomiting and colic had stopped and the eczema much improved

Case 2. Male, five weeks of age. This infant had been breast-fed for four weeks, during the latter part of which the mother, in consequence of her extra duties, became tired and nervous The infant became fretful and colicky; the weight stationary at 8¾ pounds. The milk became scanty and at four weeks breast feeding was discontinued. The artificial food did not agree and I was consulted when the infant was five weeks of age. I returned the infant to the breast, supplementing a small bottle feeding after each nursing of five minutes' duration. The mother was as far as possible relieved of care and worry. The breast secretion soon improved and an analysis showed the first sample, fat 5.76 per cent, the second, 7.75 per cent. The artificial food was discontinued and three-hour nursings of five to eight minutes' duration ordered, preceded by water. The vomiting and colic were soon relieved and the infant began gaining six to eight ounces a week. At twelve weeks the weight was twelve pounds.

Case 3. Male; the second child; birth weight 9 pounds; breast fed From the first this infant had severe colic, keeping the household upset day and night. The mother was nursing the infant every two hours, day and night, in an attempt to keep it quiet The breast was emptied at each nursing, yet the baby seemed hungry. The mother was tired and nervous. The infant vomited frequently, the stools were numerous and contained many fatty masses. The weight had gradually increased to 10 pounds.

I first saw this infant when it was one month of age, at which time it had been decided to discontinue breast feeding. An analysis of the breast milk showed fat, 3.6 per cent, and 6.2 per cent Five to eight-minute nursings at three-hour intervals were ordered after each of which the infant was offered one ounce of dextrinised barley gruel in a bottle. It was arranged so that the mother could have good rest at night and as a result conditions improved at once. A small amount of skim milk and still later whole milk, was given with the gruel. The artificial food has been gradually increased as the breast secretion demanded and at five months the last breast feeding was given. At this time the baby weighed 16 pounds, was firm and could nearly sit alone.

Case 4. This infant, the first child, was first seen during my dispensary service, November 25, 1914. At this time it was two months of age, its weight was 12 pounds. It had been breast-fed from birth and the mother brought the infant for advice as to what food to give, as the breast milk was deficient. The breast was emptied at each nursing and the infant not contented I was unable at this time to secure milk for analysis. The mother was advised to nurse her infant every three hours for five minutes; following which two ounces of modified milk were offered, care being taken to have a nipple with small holes. The amount of artificial food was increased as seemed necessary. This infant was brought to the dispensary quite regularly for a period of nine weeks, then the mother went out of the city on a visit. This infant was next seen at six months of age, at which time the weight was 17 pounds and the general condition good. The modified milk had not been increased The breast milk of fairly good quantity showed the following analysis: Before nursing, fat, 2.72 per cent, proteid, .79 per cent; after nursing, fat, 11.52 per cent, proteid not obtainable as sample was small.

STREPTOCOCCIC SORE THROAT WITH EDEMA OF THE LARYNX AND PARALYSIS OF THE SOFT PALATE*

BY GAYLORD C HALL, M.D.
Louisville, Kentucky

In a family consisting of husband, wife and one child about a year old, a house cat of which they thought a great deal and fondled considerably suddenly developed sore throat and other evidences of disease for which it had to be killed. Ten days after the cat had been destroyed the man of the house developed sore throat, which subsided in a few days under simple methods of treatment. Two weeks later the woman developed sore throat, but as the symptoms did not appear urgent a physician was not immediately consulted. However, her throat did not get well, nor did it become markedly worse, until five days had elapsed, when pain and swelling increased and she consulted the family physician, who prescribed an antiseptic gargle. No improvement followed this treatment According to the history obtained, there was no ulceration nor membrane present in the throat at any time.

On Sunday morning, a week after the initial symptoms were noted, paralysis of the soft palate suddenly ensued and was followed by great dyspnea. As the family physician could not be obtained at the time, another doctor was called. At two o'clock the same day the doctor telephoned me to come immediately and be prepared to perform a tracheotomy. When I reached the house half an hour later the woman was very much excited; her temperature was 103 degrees F., skin hot and dry; there was no rash nor eruption upon her body; but some enlargement of the cervical lymphatic glands were observed; her respirations were labored and rapid; pulse 132.

---

*Clinical report before the Louisville Eye, Ear, Nose and Throat Society.

Examination showed the tonsillar area exceptionally pale, markedly swollen and boggy in appearance. Upon depressing the tongue the epiglottis was found greatly swollen and looked like a strawberry; the aryepiglottic folds were edematous and infiltrated; in fact, the entire laryngeal interior was infiltrated to such an extent that only the slightest "chink" remained for the passage of air.

Upon being asked whether she had ever suffered from renal disease, the woman said "yes, that seven or eight years previously she had what her physician diagnosed as kidney trouble" However, she had subsequently married and passed through pregnancy and parturition without any symptoms of renal disease

Under local anesthesia multiple punctures were immediately made over the larynx and epiglottis with the point of a knife to relieve the edema; an incision was also made in the peri-tonsillar region above to see if pus was present. No pus was found

About this time the family physician arrived. We decided upon free diaphoresis. She could drink nothing because of the paralisis of the palate. We gave her 1-10 grain apomorphine and 1-10 grain pilocarpine; it was probably two hours before perspiration began. There had been no chills nor sweating at any previous time during her illness.

I remained with the patient until eleven o'clock that night. On two or three occasions in the meantime her breathing became so labored that tracheotomy seemed imperative, but as respiration improved in a few minutes the operation was not performed After consultation with the family physician and the husband, we decided to take the chances without tracheotomy. The patient was "propped up" in bed in practically the bronchoscopy posture with pillows, and passed the night without any material increase in severity of the manifestations. The next morning she was little if any better; she was breathing, and that was about all; her general condition had not improved.

A feature of interest is that, without any of the cardinal symptoms being present excepting as noted, this woman developed paralysis of the soft palate on the seventh day of her illness; and with nothing further to guide us I suggested the immediate administration of 10,000 units of diphtheria antitoxin which were given. At six o'clock I again saw the patient in consultation, and secured a specimen of secretion from the interior of the larynx for examination. The next morning she was greatly improved. After the administration of another 10,000 units of antitoxin the patient made an uneventful recovery. No other specific treatment was instituted. Within twenty-four hours report was received from the bacteriologist that his investigation showed pure culture of the streptococcus. It was thus not a diphtheric but a streptococcic infection, yet we secured the most remarkable and prompt response from administration of diphtheria antitoxin.

This woman had a child one year old who had been constantly with her until the date of my first observation, when I excluded the child and everyone else from the room and placed the patient in charge of a special trained nurse. Five days thereafter the child suddenly developed marked glandular enlargement on both sides of the neck, without any evidence whatever of ear infection, simply an immense swelling of the cervical lymph nodes. We administered 5 cc. of antistreptococcic serum, and in twenty-four hours the child was much improved. The dose was repeated two or three days later followed by complete recovery.

Dr. S. G. Dabney: It would have been more suggestive of the cat being at fault had the lady developed sore throat first, as women are more inclined than men to fondle pets. It is quite probable the infection was derived from some other source, the husband conveying the infection to the woman.

An interesting feature is the soft palate paralysis. The diagnosis is generally made by regurgitation of fluid through the nose on swallowing, and by disturbance of speech. It is not uncommon in quinsy and in acute infections of the soft palate independent of either quinsy or diphtheria. It is uncommon in the early stage of diphtheria, being a sequel rather than an early manifestation. While the trouble was not due to diphtheria in this case, no harm could result from the administration of antitoxin.

As to the employment of vaccines: I wish we knew more about vaccine therapy, and could secure more accurate information from the bacteriologists on the subject. I understand vaccines are not often used in acute infections, and are sometimes followed by unexpected symptoms when so employed. I think vaccine therapy may be of much value, and will be better understood in the future.

I do not believe the laryngeal edema in the case reported was due to Bright's or other constitutional disease. Edema of mucous surfaces in Bright's disease is pale. There appears to have been an acute attack of sore throat due to streptococcic infection followed by edema of the larynx and paralysis of the soft palate; such cases are uncommon, but are not unknown by any means.

We have doubtless all read in the Boston and Chicago journals during the last two or three years of the prevalence of a peculiar sore throat. It seems well established that it was nothing more than a streptococcic infection conveyed by milk, far more serious than the ordinary sore throat. During the winter of three years ago there occurred here quite an epidemic of sore throat accompanied by glandular swellings. I remember in one family the father and three children had enormous glandular enlargements. Although the glands were not markedly involved in the case reported, it differs in no other essential respect from those seen here three years ago.

As to treatment: I have seen a number of patients with edema of the larynx, and all of them recovered. I generally apply an ice bag, administer calomel, and scarify rather freely, cutting through the swollen aryepiglottic folds over the larynx and epiglottis Under these measures there is usually rapid improvement All of the cases I have seen were practically well within twelve hours. It is stated in the majority of the text books, and I believe there is practical agreement upon this point that if the edema does not become much worse within twelve hours, the patient will recover, i.e., the crisis comes soon for better or worse.

Dr. G. C. Hall: In reporting the case only the most important points in the history were mentioned. I do not believe Bright's disease had any connection whatsoever with the case; the urine was carefully watched during the attack; while a few casts were noted the first few days they promptly disappeared. The infection was undoubtedly streptococcic in origin Although the trouble was not due to diphtheria, I desired to emphasize the point that sometimes a prompt response is secured when diphtheria antitoxin is administered in stroptococcic infection. The improvement following the injection of antitoxin was prompt and decided, and the recovery of the patient is attributed thereto.

My diagnosis of paralysis of the soft palate was based upon the usual symptom, viz., regurgitation of fluid through the nose. The faucial pillar on one side was swollen, but not sufficiently to interfere with the soft palate, therefore I considered it a manifestation of true paralysis rather than mechanical obstruction.

As regards the other treatment employed: I immediately gave the woman ten grains of dry calomel on the tongue; her throat was dry and there was no saliva. The calomel was given at six o'clock, and the next morning it was found collected around the teeth and dried on the tongue, showing that there had been no absorption.

The infection was undoubtedly streptococcic in origin, as shown bv prompt recovery of the child after the administration of anti-streptococcic serum.

THERAPEUTIC SUGGESTIONS IN CHILDREN'S DISEASES*

BY FINLEY ELLINGWOOD, M.D.
Evanston, Illinois

The jewel of all the gems of knowledge essential to the practicing physician in the treatment of the diseases of childhood is, simplicity. A rational knowledge, a plain comprehension of the sensitive character of the nervous system so readily unbalanced, a consideration of the fact that the nervous force and vital power in a child possess active restorative power—the ability to readjust the functions of the different organs in the body to a much greater extent than in adults—all these faculties combined enable us to handle these cases with success.

In treating diseases of children, my experience began long before alkaloids were in common use. Consequently, the fluid medicines have been my recourse. There are a large number of the alkaloids that, by the method of their preparation adopted by the Abbott Laboratories, which prepares them in smaller dosage, can be easily adjusted to the diseases of childhood,

*American Journal of Clinical Medicine.

and even if a smaller dose than that in the granule be needed, it may be prepared by dissolving the granule in a definite quantity of water. To illustrate: If I desire to administer 1-1000 of a grain of atropine, but the granule contains 1-100 of a grain, I dissolve one of these in ten teaspoonfuls of water. Each teaspoonful should thus give me 1-1000 of a grain. This course can be adopted with granules of any strength. I have invariably found it wise to give the very smallest possible dose from which medicinal action could be secured.

Digestive Troubles of Children.—With healthy children, the first disturbance is usually one of digestion. Otherwise, fermentation occurs readily in the stomach, an unbalance of the gastric fluids resulting in an excess of the acid principles. This simple consideration should be constantly in the mind of the prescriber in the treatment of acute conditions. One can quickly determine whether the vomitus is acid; whether there is a broad tongue covered with a coat, white, slightly thicker at the base. This demands a simple neutralizing agent, and of these we have many. It is common treatment to prescribe a carthartic. This is nearly always unnecessary with children, but a mild saline laxative is often very useful. A preparation known as neutralizing cordial—a compound syrup of rhubarb and potassium—is very simple in its adjustment to these conditions, after the saline laxative has been given.

Accompanying the fermentation, febrile action takes place. I believe this is the commonest phenomenon among disease-indications occurring in childhood. I have proven a thousand times to my own satisfaction that there is no greater error advanced by the profession than the one which declares that an elevation of temperature is an essential process, and that there is no need of paying any attention to a fever. "Wait," the scientifically learned practitioner says, "until enough indications appear to permit prescribing for a total disease by its name. If we wait long enough, we shall have remittent fever or perhaps typhoid fever or an acute local inflammation of a violent form in some important organ, which develops from that fever, and then the prescriber can prescribe for that disease the remedies that are named in the books as having been subsequently used for that purpose."

Can there be a more erroneous course than this? I am confident that this has led to more fatal endings than any other one simple mistake.

As to Combating Fevers and Vomiting.—For thirty-five years I have laid it down as an invariable rule never to permit any elevation of the temperature to continue without some treatment being instituted. It is a simple thing to decide whether aconite is indicated—when there is chilliness, sharp quick pulse, dry hot skin. Often 10 drops of a good U. S. P. tincture in 4 ounces of water, giving a teaspoonful every half hour or hour, will abate the fever, dissipate all evidences of disease, and bring about a normal condition of health inside of twelve hours. Aconitine in sufficiently small doses can be adjusted for the same purpose. This at once causes the developing processes of the inflammation to abate, and there is no development. It makes no difference whether the condition will be one of general fever or a local inflammation; always, normal conditions are induced. If, with the fever, the patient complains a little of the throat and the tonsils are slightly swollen or the throat is red but without exudate, add 10 drops of phytolacca to the mixture and continue as before with a compress on the throat, using equal parts of alcohol and water. All theories concerning infections to the contrary, this will abate numerous cases of tonsillitis, pharyngitis, and other simple throat difficulties.

If the conditions occur as mentioned above and are not readily abated by the simple agents used for the fever, the 1-1000 of a grain of atropine should be given together with aconite and phytolacca. The atropine—or, belladonna, which I have been using—so directly influences the local stasis that is essential to the development of primary inflammation, that it is often of material benefit in aborting the inflammatory conditions. This I have found true with throat inflammations of all kinds, as also with intestinal organs. I found this combination also to abort the infectious epidemic diseases, especially scarlet fever and measles. I am confident that, if smaller doses of this combination be given to patients who have been exposed to scarlet fever, measles, or even diphtheria, even though the disease be not fully warded off (as, however, it has been in some of my cases), it will be rendered so mild and devoid of so many of the objectionable features that the result is well worth the physician's effort. I am confident that this combination, given through the course of whooping-cough, ameliorates all of the latter's factors.

An unpleasant complicating feature at the onset of nearly all acute difficulties of children is nausea and vomiting. This soon becomes a troublesome and ultimately often a serious factor. The combination I use first, and have been using for many years in about the same form for all of these cases, is a mixture of equal parts of bismuth subnitrate, ingluvin, and sodium bicarbonate. One-half dram of this powder is put into a glass with 2 ounces of water. I have the nurse stir this thoroughly and administer to the patient a teaspoonful of it every ten or fifteen minutes; usually suspending other medicine until the vomiting is controlled.

The vomiting checked, I then endeavor to get rid of the cause of the vomiting as quickly as possible. It is surprising how many cases of vomiting of whatever cause will yield to those very simple measures if persisted in. In those diseases in which there are serious causes to blame for the vomiting, such as intestinal obstruction or disease of the brain, these must be discovered quickly and treated without regard to the symptoms. In administering the above, no attention should be paid to the fact that one or two of the first doses will be ejected. The medicine should be given regularly, just the same. In severe cases, a mild sinapism may be placed over the stomach.

Febrile Infections of the Throat and Chest.—If aconitine and atropine, in sufficiently small doses, be given throughout the course of pneumonia, bronchitis, and pleurisy, with whatever treatment the physician thinks best to give, he will find the conditions modified, the violence of the phenomena ameliorated, and the course of the disease greatly abridged. However, the dose must be very small and frequently repeated.

These two suggestions are also of much value in croup, especially for the inflammatory symptoms. For the hoarseness, cough, and threatened bronchial irritation of this condition, the combination of calcium, has now come into such general use that no physician who ever has depended upon it would think of getting along without this valuable drug. At the same time, there are cases, in which there develop specific infections early, that are well treated by the addition of jaborandi or its alkaloid in minute dose, together with aconite and phytolacca. With these remedies, while the germs may not be so quickly destroyed unless echinacea be given with them, it is surprising how quickly the difficulty will abate.

Jaborandi opens all the secretory functions, thus promoting rapid elimination of the toxins. At the same time it immediately destroys the relationship between the exudate and the membrane to which it is attaching itself, and ultimately loosens it and permits its being readily thrown off. I learned the use of jaborandi (pilocarpine) very early in my practice. I at one time passed through a severe epidemic of diphtheria in which within a few days 125 patients succumbed. This was before the days of serum, antitoxin, and the probably efficient vegetable antitoxin, lobelia. I there learned to combine the oils of eucalyptus and turpentine in an atomizer, vaporizing this mixture with steam. The result of the persistent and thorough use of this inhalant was marvelous in cleaning out the postnasal and laryngeal exudate and in relieving the distressed breathing. I have used it, in the many intervening years, in many cases, and, with the remedies above named and more recently the hypodermic use of lobelia, have obtained excellent results.

Lobelia Hypodermically for Diphtheria and Pneumonia.—The hypodermic use of lobelia came about in a case of diphtheria, when the patient was dying after antitoxin and every available measure had been used. The promptness with which the vital forces of the patient recuperated—regained their ascendancy—and the distressing symptoms disappeared were so marvelous that the agent was persisted in; and it has since then been used in probably thousands of cases. It is now being used by men who previously had depended upon the serum-antitoxin alone. Many use it in conjunction with the serum-antitoxin. All who have tried lobelia now agree that it has a massive force against all the factors present in a severe case of diphtheria.

In the first place, lobelia antagonizes directly the influence of the infection and destroys the germs. This is all that is expected of the serum-antitoxin. It, further, puts the patient at once into a greatly improved physical condition, single doses accomplishing wonderful results. It improves the condition of the blood, encourages every excretory function, stimulates the nervous system, antagonizes the tendency to diphtheritic paralysis, or, if this has occurred, contributes materially in restoring the normal nerve function in the paralyzed parts. Another important influence of this remarkable remedy is that in cases of anaphylaxis in which those who depend upon the serum-antitoxin are without recourse, this agent exercises all its primary influence. There are already scores of cases reported, in which it was depended upon alone, when the patient was at death's door, with almost miraculous restoration of the normal functions.

I am making these apparently exaggerated statements on the basis of reports I have been receiving for the last six years from the thousands of physicians throughout the United States who have been testing this remedy. They are not based upon my own experiences to any large part, but I have been forced to have confidence in the remedy from the experiences of others.

One of the common conditions of childhood that baffles many physicians and yet proves amenable to simple measures is pneumonia in all its forms. This also applies to other chest disorders To one who has employed such remedies as ipecac, aconite, bryonia, belladonna, jaborandi, cactus, and hypodermis lobelia, all of which can be used in the concentrations carefully and properly adjusted, fear or dread at the presence of this disorder disappears and confidence takes their place.

I would probably advise aconite for the first febrile manifestations, 'continued as long as the dry skin and a sharp, small, hard, quick pulse is present; bryonia for the short, quick, hacking cough, persistent and irritating, with quick, shooting pains in the chest and which are aggravated by motion or by handling the patient, as is apparent in some small infants; belladonna for the local primary congestion, especially if marked by cool skin, cool extremities, dilated pupils, and some general dulness; jaborandi with aconite for the dry skin or for the lack of bronchial secretion. Jaborandi must be given also when the secretions are generally deficient, but it is not to be continued after a stage of apparent feebleness occurs. Atropine is a better remedy at that stage.

While cactus is not considered an actual sedative in fever, it exercises a mild controlling influence over the temperature in pneumonia or proncho-pneumonia, and, if the prescriber fears heart failure, he has a most reliable remedy, indeed, in this alone. It is not always necessary to use strychnine with it, as, from my own experience, strychnine tends to antagonize the special fever sedatives.

In the later stages of the severe forms of pneumonia, we are having constant reports of the snatching of the little ones from the hands of death at the last moment, after everything else has failed. by the hypodermic injection of from 10 to 30 drops of hypodermic lobelia. These reports from all corners of the United States are so similar, so enthusiastic, and so numerous that I am more than convinced that in this the profession has a marvelous agent, one which before a great while will undoubtedly come into general use for this purpose.

The Nervous Disorders of Children.—An important remedy in the nervous disorders of children is gelsemium. From reports I get about its concentration gelsemoid, I believe this remedy exercises much the same influence as do the fluid preparations. The indications for this remedy are: Nervous twitchings, when the temperature is rising. when the skin is hot, when the face is suffused with a bright flush, the eyes are bright and restless, and the pupils are contracted. It makes no difference what acute inflammatory diseases will follow these preliminary manifestations, this remedy is the one to prevent further development; or, if the child with any severe disorder presents this syndrome, this remedy can be introduced with others not incompatible, with immediate results.

Gelsemium is especially effective also for urinary irritation in childhood, whether that induced by disorder of the kidneys or that depending upon local irritation. Painful urination of sudden occurrence is quickly met by this remedy.

In the treatment of rheumatic conditions in childhood, gelsemium has an excellent place. Whatever other remedies be given for their influence upon a possible lithemic condition, macrotys combined with gelsemium or bryonia in acute cases makes as good a combination as any that could be suggested. These remedies seem to have a peculiar influence over the nervous distribution, influencing the excretion of irritating products, and promoting a normal balance of nerve function.

I believe they go a long way toward promoting a normal hormone balance. I am not one who believes that hormones must be given, properly selected, to overcome every disturbance of the proper balance that must be sustained between the action of the endocrinic glands. I am confident that the vegetable remedies or their alkaloids will yet be adjusted in an exceedingly satisfactory manner, in harmony with the functional action of these subtle and not yet fully understood organs.

As nervous phenomena develop and convulsions threaten, gelsemium is an excellent remedy if given in sufficient dosage.

The smaller dose may be repeated every five or ten minutes until the effect is secured, or on or two sufficiently large doses may be demanded. We probably have no better remedy for cerebrospinal meningitis, in its convulsive phemonena, than this agent It should be given with that consideration in mind. At the same time, calcium sulphide, echinacea or other active antitoxic agents should be administered with it, in order to antidote the causative features of the disease. This disease is now yielding readily to hypodermics of lobelia and echinacea, and future study promises to prove the value of this course.

Cardiac Troubles and a Peculiar Syndrome.—Before closing this paper, two or three isolated conditions occur to me that I want to mention. One is the frequency of heart complications in childhood. The inexperienced physician, judging these by parallel conditions in the adult, is very apt to give an unfavorable prognosis. I am convinced that these are not necessarily serious. They yield to the simple vegetable remedies very quickly. If a proper balance in other conditions be sustained and the child be kept quiet, it is surprising how many of these heart disorders will disappear. The use of cactus and macrotys—with strychnine in very small doses if there be feebleness—contributes very largely, with proper dieting, and care of the digestion, to the restoration of these cases.

The other isolated condition to which I wish to refer, and which has baffled the skill of many physicians, is one that occurs in malarial neighborhoods. I have had patients brought to me who had been taken almost the length of the United States, consulting specialist after specialist, submitted to surgery, and finally were looked upon as incurable. The patient's temperature goes up 1 or 2 degrees; he becomes peevish and restless, sleeps poorly, appetite disappears. Occasionally there is some emaciation, but not always. The skin becomes yellow. The conjunctivae are discolored. The tongue is broad and thick and has a pasty yellowish coat. Fretfulness increases. The indication that points to this condition directly, and differentiates it from the tuberculous, or other serious conditions which the physician is likely to class it with is that the bowel movements are scanty, very light-colored, often clay-colored, and float on water.

I have known this syndrome to persist for months under all kind of treatments. A little pressure over the region of the liver shows tenderness. The persistent, but slight febrile phenomenon points to aconite as the first remedy. The somewhat enlarged condition of the liver and tenderness point to belladonna and bryonia. The slightly jaundiced condition of the skin and clay-colored feces point directly to the necessity of some liver-remedy. I have not found calomel of any particular benefit in this condition. I depend upon small doses of chionanthus and sodium phosphate in doses of 10 or 20 grains every three hours. The above remedies, with a little strychnine or nux vomica after the fever abates, or, in very small children, with inunctions of quinine bisulphate twice a day, will quickly restore the child to the glow of health.

SOCIETY TRANSACTIONS

AMERICAN PEDIATRIC SOCIETY

Twenty-seventh Annual Meeting

Lakewood, N. J., May 24-26, 1915

The X-Ray in the Diagnosis of Thoractic Disease in Children, Illustrated by Lantern Slides.

DISCUSSION

Dr. Rowland G. Freeman, New York City: The X-ray furnishes the most important means of reaching a definite diagnosis of intrathoracic lesions, and should not be neglected in any obscure case. It is particularly adapted to children, because one can get a better picture of children than of adults; and because a child, even when very sick, can be carried to the X-ray laboratory.

Dr. Rowland: I cannot agree with Dr. Freeman that the X-ray shows a clear enlargement of the thymous gland. In practically all the plates that I have seen in which it was asserted by the X-ray man that an enlarged thymus was present, the shadows turned out to be due to some other cause—commonly an enlargement of the glands, due to tuberculosis.

There is one other thing that I should like to call attention to, and that is the shadow cast by the fluid in the pericardium. When the cardio-hepatic angle is an acute angle and fluid collects, the angle becomes obtuse at first; but when more fluid collects, so that the pericardium is completely filled, and much distended, the cardio-hepatic angle again becomes an acute angle; because the fixed point of attachment does not allow expansion to the right or the left, but only in the center. Therefore, the pericardium bulges out and produces an acute angle. I have had a considerable series of dilatations in which the angle was first acute, then obtuse, and then acute again. If reliance is placed on the appearance of an acute angle, an error will be made.

Dr. Koplik: I think that we should be very cautious about allowing the radiographer to make the diagnosis for us, from findings in the chest shown in the radiograms. There are two things that I have experienced disappointment in. One is in the presence of fluid, a diagnosis of cavity or thickening of the pleura. I recently had a case of aspiration pneumonia in which the physical diagnosis was cavity. The X-ray showed what was apparently a cavity in the upper part of the left lung. The only thing that saved the boy from operation (the plate having been seen by a surgeon, who insisted that the patient should be operated on, because there was a cavity with fetid sputum) was that the lower part of the lung showed a pneumonia by physical examination. The boy made a complete recovery. He must have had fetid pneumonia after tonsilectomy, which simulated cavity-formation in the upper lobe, and in the lower lobe, showed a pneumonia. The radiographer, after having seen two or three plates, withdrew the diagnosis; but this was not in time to have avoided operation, had there been compliance on the part of the clinician. I have also had cases in which the report was a thickened pleura, and I insisted that there was fluid present; and in which, after a search, we actually found fluid and operated.

Another very deceptive finding is that of spots on the lung, which seem to indicate, according to the radiographers, tuberculosis of the lung. We should be cautious about accepting their diagnosis of these spots. We cannot today be absolutely certain in regard to the interpretation of X-ray plates, until we have more anatomical basis for the interpretations of these shadows. Our post-mortems have not been sufficient to allow the radiographer to make a definite diagnosis upon which the clinician should plainly proceed to act.

Dr. Dunn: I should like to back up what Dr. Koplik has just said about caution in making a diagnosis from X-ray plates. I have had, at the Infants' Hospital, twenty-four postmortems on babies in whose cases the plates had shown some condition on which diagnoses were made. In three cases in which the diagnosis of fluid had been made, no fluid was found, but simply fibrous composition of the pleural cavity. We found miliary tuberculosis frequently at postmortem examination in cases in which the X-ray had not shown it. I do not think that most patients will show tuberculosis of a pure miliary type. We had among these postmortems, a case diagnosed as tuberculosis, the portmortem showing old broncho-pneumonia with fibroid and bronchiectasis. Comparing the X-ray diagnosis with the postmortem findings in this series of cases, we discovered that they did not agree in fully half the twenty-four cases

Dr. Holt: In connection with the difference between the X-ray diagnosis and the physical findings, I would mention that there were shown before the Medical Society of New York, about three months ago, a series of plates. In one of the cases, radiograms were taken on three successive days. The report would come back one day as one thing, and the next time another thing.

Most misleading are the shadows supposed to be due to enlarged bronchial lymph-nodes. It is indeed a bad plate that does not show something that may be interpreted as enlarged lymph-nodes. We had a child, not long ago, in whom the symptoms suggested foreign body. He had sudden dyspnea; and we were convinced by the history, and not the physical signs, that there was a foreign body in the lungs. He was X-rayed and the report came back that there was general miliary tuberculosis with cavity. At autopsy, the foreign body was found. It was a piece of a chain. There was no cavity, and no miliary tuberculosis. What had been interpreted as tuberculous lymph-nodes was caused by the contrast between an emphysematous lung and the bronchi, which would produce shadows hard to distinguish from the shadows of tuberculous lymph-nodes.

Mistakes are often made by accepting the radiographer's diagnosis In many cases, it is extremely misleading. When there is no agreement between the physical signs and the X-ray picture, it is a dangerous procedure to act upon the diagnosis furnished by the X-ray.

Dr. Gittings: I was much impressed by the paper read in Philadelphia by one of the Phipps Institute tuberculosis specialists, who attempted to corroborate his work by means of X-ray pictures. The tuberculosis specialist is not at all chary about finding physical signs in fully fifty per cent of the cases examined. In this instance, the diagnosis that he had made from the physical findings was not corroborated by the roentegenologist, who would find the disease on the right side in cases in which the tuberculosis specialist would find it on the left

Of eighteen bodies dissected for frozen sections, which I have been studying lately, eight had thymuses of such size that they would have been impossible to differentiate from enlarged bronchial glands.

Dr. Morse: It seems to me that this question of the use of the X-ray in the diagnosis of conditions of the chest is really a very simple one. We all feel the same way about it, in reality. The X-ray is merely a picture, to show the differences in the lights and shadows. It does not make a diagnosis, but is merely a means of helping us to make it. We should look on it in the same way as we do other means of diagnosis, and make the diagnosis on a combination of these. It is not the X-ray that makes the diagnosis, but brains.

Dr. Cowie: There is one point in our X-ray work that helps us in the interpretation of those spots which look very much like miliary tuberculosis, and that is the stereoscopic plate. A flat plate cannot be depended on; for when you get two bronchi, one crossing the other, the point where they cross looks like a tuberculous spot or lymph-node. We now use the stereoscope; and the mass that looked like a tubercle or gland resolves and disappears, so that you see the bronchi in their natural position.

Another point I wish to speak of is the importance of the use of immediate percussion in outlining areas of pneumonia in infants. Doubtless all are aware of the ease with which these little spots or areas may be outlined by feeling, instead of percussing over the spots. In cases that we could not outline with ordinary percussion, or in this way, we have been able to get pictures by means of the X-ray. The latter is a great help in diagnosis, but it is only an adjunct; and we should not forget the leukocyte-count and the physical examination.

Dr. Hand: The X-ray is of very great value; and the more we use it, the more we appreciate it. I think, however, that Dr. Freeman did not lay enough stress upon its limitations, especially in pneumonia and empyema. The X-ray will show consolidation; but consolidation of the lower lobe may resemble an empyema, and the X-ray will not show at what distance from the front wall of the chest the condition giving the appearance of empyema is situated. This winter, there was a case in a child that I was sure was empyema following pneumonia. I had explored the chest twice without finding pus. The X-ray showed a well-defined shadow. The lateral view was obscured by the shadow of the heart. We were able, finally, to locate the empyema. In the diagnosis of heart conditions, I think the X-ray is of very great value. I have had more discussions with my residents over the diagnosis of heart conditions than over that of pneumonia. They are apt to find murmurs that I do not hear; but those that I cannot hear do not worry me, because the future course, I am satisfied, shows that they are going to prove to have been functional murmurs. The X-ray clears up the diagnosis very well in these cases.

Dr. Freeman, closing: I should not have bored you with these slides if I had not expected the sort of discussion we have had I understand the limitations of the X-ray: but I simply wanted to show a few cases in which I found it very useful as an aid in the diagnosis. My own feeling is that we expect too much from the X-ray. Our resident said to me, one day: "The X-ray man did not send the diagnosis." "It is not his business to do so," I replied. "You go and tell him all you know about the case, and he will then help you to make a diagnosis." It is a method that should be taken in connection with the other methods that we have at hand.

So far as Dr. Howland's remark about the thymus is concerned, I would say that I was unable to corroborate the diagnosis of enlarged thymus at autopsy. In regard to the shadows cast by the pericardial fluid, you must get enough fluid to obtain a cardio-hepatic angle that is characteristic; but in the beginning of the fluid, you will get an angle that will help in the diagnosis.

The Composition of Woman's Milk, by Drs. L. Emmett Holt, Angelia Courtney and Helen M. Fales, New York City.

Dr. L. Emmett Holt, New York City: After the first month is past, there are no practical differences in the composition of the milk until the end period. The fat is highest in the transition period. In the late period, it was as high as in the mature period, except in one case. With that case excluded, the average was the same. In only one case was the sugar less than seven per cent, and in over half the cases it was over eight per cent. It showed a diminution in quantity up to the late period. The protein did not differ much from the amount found in the early period. The milk differed but very little in composition at the various ages. The total ash is practically the same in all. The ratio between the protein and the ash in human milk is practically the same as in cow's milk in the mature period, 1:5. The astonishing thing is the close correspondence between the two milks: In cow's milk, in ordinary dilutions, we are giving more mineral than the child needs. In regard to individual variations, we have had no standard by which to tell whether or not these were in the range of normal.

Dr. Gerstenberger: I should like to know what the iron determinations were, if these were made. Barton and Edelstein found that cow's milk had decidedly less iron than breast milk.

DISCUSSION

Dr Southworth: One of the interesting things about the table is the high fat in the transition period, the highest of any of the estimation. This is the time when we are so frequently confronted with the bad effects of high fat in maternal milk, when we get the gastric disturbances and vomiting that come from the child's getting milk too high in fat. This can frequently be overcome by diluting the breast with barley-water or some alkaline solution. The fact that the breast milk is normally high in fat at that time, and then shows a tendency to fall, gives an explanation of the fact that if we are temporarily able to overcome the effects of the high fat by diluting the breast milk, nature comes to our assistance later in lowering the amount of fat.

Dr. Holt, closing: Answering Dr. Gerstenberger's question, I would say that I have not seen any reference to the work of Barton and Edelstein on the iron content of cow's milk. They have studied the iron content of human milk, and have found 1.7 mgm. in 1000 c.c. of milk. I meant to have said something about the two or three studies that have been made of a single element of milk. They have studied iron and calcium. We have not made any determination of the iron of the milk; because, to do so, it is necessary to use very large quantities. as high as one thousand cubic centimeters, and nine-tenths of the determination made with 30 c.c. were absolutely valueless The percentage of iron is only eight ten-thousandths on one per cent—1.7 mgm. in 1000 c.c. of milk. If we had undertaken to study the iron content, we could not have done anything else; and, finding that it had already been studied exhaustively, we devoted ourselves to other studies.

A Plea for Accurate Statistics in Infants' Institutions.

Dr Henry Dwight Chapin, New York City: All facts that can present a fair picture of the hygienic condition of the institution should be carefully presented. Especial care should be taken in keeping records in regard to babies under one year of age. The individual study of each baby should include the history on admission, age, physical condition, length, weight, general nutrition, previous feedings, and record of antecedent diseases. The babies should be classified, or graded, by ages, on admission, and as to physical condition, height, weight and nourishment. A summary can then be made showing the average gain or loss under each heading. If there is gain, a comparison can be made with that of the non-institutional baby. There should be a record of the diseases acquired during the baby's stay in the institution. The summaries of the individual records would then show the number of cases of each disease, of communicable diseases and mixed infections, and these diseases could be classified as to their preventability. Each epidemic should be traced to its source. The final summaries should show the average on admission, the average length of stay of those that live and those that die, and the total number of admissions and discharges. It would also be interesting to have a proper follow-up system that would show, among other data, how many of those discharged under one year of age live to be one year old.

DISCUSSION

Dr. Hamill: I am very glad that Dr. Chapin has brought the subject before the society. The mortality of these institutions has been well shown by his own investigations and the investigations made in New York, to be enormously high, but I do not think that any of the statistics that have been collected up to the present time show the actual mortality among infants admitted to institutions and kept in them. The mortality is largely based on the number of infants kept in the institutions together with those boarded out.

I had the honor to be connected with an institution in Philadelphia in which the mortality among all infants under one year when admitted to the institution and retained there until the time of death was one hundred per cent. That is, no infant admitted under one year of age lived to be two years old If, however, anyone should search in the report of that institution he would find nothing in it touching on the morbidity or mortality in the institution. Recently, at a public dinner, the mortality among the infants of that institution was announced to be 10.8 per cent. The institution has a medical staff that never visits it, and a resident physician who practices on the outside. These institutions exist in our cities without arousing any protest on the part of the medical profession. Someone is responsible for this condition of affairs, and the responsibility should rest on the medical profession. We should do everything in our power to correct these conditions

Dr. Porter: I should like to speak of the work done by Dr. LaRue in San Francisco. The striking thing about it is that the year before the data were given the mortality there was 65 per cent, but that during the last year the mortality among that particular group of infants was less than 3 per cent. That is the best infant mortality record in this country. The reason for this low rate lies in the fact that these children are especially followed. The nurses visit them constantly. Every child that is boarded out is seen by the nurse once a week, and by the physician once a month. Furthermore, they have other visiting physicians who have been good enough to volunteer their services, and emergency calls are made by these physicians within a few hours, at the most, after the call is received. Moreover, the foster mothers are so disciplined that if they do not call a physician, but try to doctor the infants themselves, they lose their babies promptly; and they get so fond of the children that there is no trouble with that group of women. That is the whole secret of successful boarding out, to get the foster mothers disciplined. It is not easy, unless you have enthusiastic medical men like those in San Francisco.

Dr. VanIngen: In regard to the statistics from New York City, there is one thing which, I think, bears out Dr. Chapin's idea that we really should try to know what goes on in these institutions. Among 738 babies, 22 per cent, he said, of all that died, died in the first month of life. The mortality of all born was, for the first month, only eight per cent; but before the year was over, forty-eight per cent had died. These babies were born of mothers admitted to the hospital several months before the babies were born, and although the mortality in the first month of life was very high, there was only eight per cent that had died during the first month; yet before the year was out, forty-eight per cent had died. There must be something in the institution responsible for this high mortality.

Dr. Southworth: I am thoroughly in accord with Dr. Chapin's efforts to improve the conditions in institutions for infants. It would be of extreme value, I think, if we could get the accurate statistics that Dr. Chapin has outlined, but I do not feel very hopeful that he would be able to get such accurate statistics as he desires. I can only give an instance of this difficulty from an institution that no longer exists, I am thankful to say. On account of the very considerable mortality among the infants admitted to this institution, it was customary there to mark on the admission card of every infant its condition as "hopeful." That covered all subsequent happenings.

Dr. Knox: I can give the testimony of Baltimore on the same line. A year or two ago I had occasion to investigate the foundling babies sent to the different institutions by the City Supervisors. Over two hundred were admitted, and all were followed by the secretary of the Supervisors. Within a year of the handing over of these babies to various institutions between 89 and 90 per cent of them had died. The 10 per cent that lived, did so, apparently, because for some reason or other, the babies had been taken from the institutions for a short time, and given into the care of foster mothers or relatives. None of these that stayed in the institutions lived to the end of the first year.

No other subject can be brought to our attention that is more important than this. Either we must see that approximately normal care is provided in the institutions, or we must see that foster homes are provided for these babies. There is a great field for the development of foster homes for such infants. They should be well, and not diseased, before being sent to foster homes. We have had no trouble in Baltimore in securing homes in which trained visitors may attend the children. The calling of foster-mother is an honorable one for women who can make a living only with difficulty in other ways. A great many that are suitable in character volunteer. In that way I think, this great mortality can be reduced.

Dr. Shaw: I am glad that the subject of the infant mortality in institutions has been brought before the society, because I know of no body of men more fit to solve this problem.

When I looked into the mortality outside of the city of New York, I was confronted with a difficulty. It is hard to compile such statistics from those of the State or city at large. I do not see how Dr. Chapin arrived at his conclusions regarding the mortality of various institutions per thousand births. We cannot do it in institutions, because we have no thousand births to compare the deaths with. When we compare the deaths with the admissions, the difficulty is that some institutions count the admissions each year, and also count those left over from the preceding year, thus getting rather low figures.

I think that things are getting somewhat better now. Dr. Jacobi, some years ago, found that the same conditions as Dr Hamill has mentioned existed.

As I looked over the statistics of these institutions, I found that the highest mortalities were in those under religious orders' charge, in which the mortality was notoriously high. In one of these, however, the mortality has now been reduced from 60 per cent to 30 per cent of the admissions; and the sisters are anxious to learn how to reduce the mortality still further.

In the State of New York, comparing the statistics of institutions and homes, we are led to favor the foster-homes; but some babies must stay in institutions. The poor babies are condemned to die when placed in the institutions, and no family will take them.

Of course, institutions will have a low mortality as compared with that in the State at large. I do not see how Dr. Chapin got his figures, comparing the large mortality in his statistics with that of the rest of the State. We have never had as low as 89 per thousand. The lowest was 126 per thousand. I am not trying to excuse it, for I think it is a thing that we should get at and one that requires very serious attention from pediatrists.

Dr. Chapin, closing: Last year the President in his address, stated that one function of the American Pediatric Society should be to deal with questions touching the public at large. He was right. While valuable scientific work may be done by us, we should not neglect a broader field, in which the public presents itself. A great deal of work has been done regarding infant mortality, but this one thing has been neglected—a thing that does more to increase infant mortality than any other aspect of the question. The milk supply has been improved, and other valuable work has been done, and yet these institutions exist; and it is the doctors' fault.

With reference to the statistics given in this paper, I would say that I stated that it was difficult to get accurate statistics. The figures I have otbained were from the report on the mortality in the so-called foundling institutions published in the Transactions of the Association for the Study and Prevention of Infant Mortality. I did not say that they were absolutely accurate. I said that we wanted to get accurate statistics, but cannot get them. We know, however, that the mortality is double and treble what it ought to be; and we can prevent it, if we wish.

Some Studies on Sugar in Infant Feeding.—By Drs. Charles Hunter Dunn, Boston, and Langley Porter, San Francisco.

Dr. Charles Hunter Dunn, Boston, Mass: Eighteen patients were observed, one hundred and eight samples of urine tested, and two hundred and thirty-five tests made. Twelve of the eighteen cases showed reducing bodies on some tests. Eight showed a loss in reducing power after shaking the picric acid. The majority were difficult feeding cases. None showed marked intolerance to any of the food elements. The effect of increased sugar on the weight of the babies was surprising. They gained rapidly at first, but less rapidly after sugar intolerance developed. It is our belief that the idea of sugar intoxication has been so exaggerated as to keep us from trying the effect of large amounts of carbohydrates for babies who show an inability to take a sufficient amount of food. Some children have been much benefited by pushing the amount of sugar temporarily above the ordinary limits.

DISCUSSION

Dr. Schloss: I wish to cite the results obtained by us, a year ago, which do not agree with those cited by Dr. Dunn. We examined the urine of many infants, in a number of different ways. Our reducing test was the copper and bismuth reduction test, finding sugar with the twenty-four hours' specimen and carrying out procedures for finding out the variety. In many instances, we found that infants' urine would reduce copper, and occasionally, bismuth—without there being sugar demonstrable by other and more exact tests. In a number of instances, we were able, however, to determine that the reducing substance was sugar. We carried out the mucic acid test and the several other procedures used as a means of identification. We found that this sugar is not lactose. It has been claimed that lactose injures the mucous membrane and appears in the urine. It is well known that lactose gains entrance to the circulation when excreted in the urine, and its use as a test for the permeability of the intestinal mucous membrane was suggested. I do not remember the exact figures, but in between eighteen and twenty-one cases we found sugar present. In some instances, it was a monosaccharid—sometimes dextrose, and sometimes galactose. Sugar taken in connection with other foods is tolerated in much larger quantities than when taken dissolved in water. We made many determinations of the blood sugar, and in some cases approaching intoxication, we found, coincidently with dextrose in the urine, a very high blood sugar. These results made us feel that we were dealing with distinct intolerance to sugar. Whether this is of clinical importance, we cannot say. We doubt it. Perhaps, in common with intolerance to protein or fat or other food constituents, there is an intolerance to sugar; and it is sometimes present in the urine of infants, and is usually a monosaccharid—dextrose or galactose.

Dr. Porter: There is no antagonism between these findings mentioned by Dr. Schloss and the findings given in our paper, in which it was distinctly stated that the cases were merely only ones of disturbance, and not of intoxication. In none was there any approach to the type of case in which, I think, Dr. Schloss got most of his sugar.

This is merely a preliminary report. We have done some work, but not enough to permit us to speak with the authority that he does on the excretion of sugar in intoxications.

The interesting thing to me in this work was the presence of reducing bodies other than sugar in such a large proportion of the urines of infants. As to the delicacy of the test used, it is a reagent of copper, glycerine and sodium carbonate, which is quite as delicate in detecting reducing bodies as any other reagent that we have. There is no other so delicate as this particular mixture.

Dr. Abt: There is one thing that occurs to me, and that is that in the evolution of alimentary intoxication as taught by Finkelstein and his school, he has, at various times, offered different explanations. The underlying thought that he and they had, however, is that sugar or any other food element finds its way into the circulation because there is a damaged intestinal wall. It is not damaged by the sugar, as I understand, or by any other food element; but by bacterial action, or some toxic produce resulting from bacterial action. When one speaks of food intolerance, whether it be fat, carbohydrate, protein or salts, for that matter, it simply means, according to Finkelstein, that these food elements break through the intestinal wall and, in some way, find their way into the blood or the intermediary metabolism, and in this way do harm. The urine should be prepared by eliminating uric acid and other products from it, before making the test for lactose.

Dr. Holt: I should like to ask about the permanence of the gain in weight. It is common to have a rapid increase in weight at first, perhaps on account of the water reduction. That goes on for a time, but it is my observation that the break-down comes, and they lose as rapidly as they have gained. I recall a case that occurred last fall, in private practice, in which sugar and carbohydrates were given in large quantity. The child gained four ounces, five ounces, and six ounces, on successive days, but afterwards lost it all. A child may have intolerance to a small amount, and tolerance to a large amount. That is a point that, I think, is new; and I should like to know whether it worked out in the experience of Dr. Dunn and Dr. Porter. The greatest intolerance is that to carbohydrates. It is difficult to make a child with this gain in weight. Lately we have been using sugar more and more sparingly; and we have seen so many symptoms occurring in children getting small amounts that we have hesitated to give a larger amount of sugar. There must be at least two per cent of sugar in the protein milk. Analysis shows 2.25 per cent, so there is much more than the 1½ per cent that Dr. Dunn admits. So far as the total salts are concerned, they are much higher. We have, again, half the salts that were in the buttermilk in the protein milk. We adopt a procedure that he does not, and that is washing the curd before it is rubbed through the seive. That reduces the sugar somewhat, and the salts; but even then the salts are much higher than in most of our ordinary mixtures; so the ordinary children do not gain on protein milk, because the salts are not administered for so long.

Dr. Koplik: There is a limit to the amount of sugar that we can administer to these children. This is shown by the large amount that we can give in the form of malt sugar. The children gain for a while, and then stand still, and finally lose, if we persist in administering this large amount of sugar and other carbohydrates. In other words, there is a natural limitation, and sugar can be given only within it.

Dr. Gernstenberger: I should like to know whether the amount of protein, in that work in which large amounts of lactose were given, was high. I think a high protein content will allow of a much higher percentage of sugar than a low one, and that a low protein content most likely limits the amount of sugar.

Dr Sherman: While we have no reference to sugar intolerance, I should like to refer to some tests made in Buffalo regarding the reaction of sugar on gastric secretions. We took sixteen babies and fed them on six per cent milk, six per cent dextromaltose and six per cent cane sugar solution, dissolved in barley water, in order to give the mixture enough bulk for our study. The babies took all the solutions very well. The average amount was 130 c.c. We recovered, of the milk-sugar solution, withdrawing it in one hour, 33 c.c. Of the cane-sugar and malt-sugar solutions, we withdrew 34 c.c. Of these two solutions, we were able to withdraw almost fifty per cent more than we were able to withdraw of the milk-sugar solution. This would look as if the milk sugar stimulated motor function more than either the cane sugar or the malt sugar; but that is probably not true, for the reason that the secretion following the ingestion of milk sugar was no greater than after the ingestion of the other two. The only conclusions that we reached from these few tests were that cane sugar or granulated sugar stimulates gastric secretion a little more than milk sugar, but that dextromaltose stimulates the secretions twice as much as does milk sugar. This may be of some little importance; and it is wise to bear in mind in treating some infants that have hypersensitive stomachs.

Dr. Griffith: Speaking from the clinical standpoint, I would say that we have been interested, during this past winter, in some investigations regarding high carbohydrate foods, using malt soups which were made with different malt extracts, employing buttermilk, sugar and flour in the ordinary way. We were interested to find what the children would tolerate well. Our experience showed that ten to thirteen per cent of carbohydrate was borne well, and that the children gained in weight on it and held their weight. We had better results with that method of feeding than with any other, in the average condition. When I speak of a carbohydrate diet, I mean ten to thirteen per cent, extremely well tolerated.

Dr. Dunn, closing: In reply to what Dr. Abt said, I would say that the problem that we are now studying is the possible damage that sugar produces.

In answer to Dr. Holt's question as to the permanence of the gain in our series, I would say that the gain in weight was maintained; but that simply means that these particularly selected babies were shown to have a high tolerance for sugar, which was cut down as soon as any symptoms of intolerance developed. Whether or not they go to pieces rapidly, however, after having been fed on this diet, depends on how long they have the symptoms of sugar indigestion and how much fat is fed. We have not obtained any figures yet, but my personal view is that one of the chief causes of these severe cases that cannot take fat is prolonged over-feeding with sugar and its fermentation. Increasing the sugar until it causes fermentation, and continuing feeding with a high percentage of fat, will often cause a serious blow-up, such as occurred in a case seen by us since we wrote the paper; but these particular cases maintained their weight right along. When the sugar was cut down, however, the gain was not quite so rapid.

I want to agree strongly with what Dr. Gerstenberger said, that the amount of protein makes a great difference in the sugar tolerance. We gave, in the beginning, between two and two and a half per cent; but later, it was kept at one and a half per cent.

In judging of the possible effects of using sugar, it must be considered that it has been found that many specimens of lactose contain malt, gas-bacillus spores, and other things that cause trouble and make us draw wrong inferences. The lactose should be most carefully boiled.

Dr. Holt spoke of the percentage of sugar in albumin milk. Funk now uses a higher percentage of sugar himself. We have used as high as four and a half.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

JAMES WARREN VAN DERSLICE, M. D.

Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.

Treatment of Summer Diarrhœa of Children.—Girou, of Toulouse, reports from Prof. Bezy's Clinique, successful results in the treatment of the summer diarrhœa of children by hordenine sulphate. The method adopted is to place the child for from 24 to 48 hours on water or glucose-water; if vomiting is frequent, the stomach is washed out, and if the stools are very fœtid, the bowel is washed out with collargol. A purgative in the shape of calomel or castor oil is given, followed by an intestinal antiseptic, such as lactic acid, betol, or tannigen. The general condition is stimulated by baths, friction to the surface, and, above all, by hypodermic injections of 10 c.c. of normal saline, to remedy the dehydration of the tissues. If the diarrhœa continues in spite of this treatment, sulphate of hordenine is given either by the mouth, by the bowel in large injections, or by hypodermic injection, the best effects being obtained by the last. A series of observations carried out by Tomey proved that this alkaloid is able, through its action on the nervous system and on the secretions, to check diarrhœa, and, by its bactericidal properties, to destroy the intestinal microbial growth. The diarrhœa stops almost suddenly after the first or second injection.

The dose is given according to the age of the patient. A sterilized syringe, 1 c.c., graduated in one-tenths, is filled from an ampoule, this amount containing 25 centigrammès of hordenine. The child is given one division for each month of life, but the minimum dose given, even at one month, is three divisions. Practically, these amounts can be slightly increased, but the action of the drug on the medulla must always be borne in mind. Vomiting, dyspnœa, cyanosis and a few convulsions sometimes follow an injection. These effects are transient and not dangerous, but it is wise to warn the parents beforehand. More than 100 cases have been treated with this drug with good results and with no after-effects to cause the least anxiety.—(Journ. des Praticiens, June 19, 1915.)

Hunger Fever in the Newborn.—Mayer (Arch. f. Gynak., 1915, civ) reports studies in newborn infants in Sellheim's Clinic in Tubingen. It is often observed that the newborn infant loses from six to eight ounces during the first week or ten days after its birth. If the loss of weight is rapid the temperature rises and both find their highest point at the third or fourth day, occasionally as late as the sixth day. Some infants show marked thirst during this period. In seeking a cause it is natural to consider the part played by bacteria in the intestine, and also by the passage of urates and uric acid from the kidneys. It is thought when the intestinal condition is not normal that the abnormal bowel permits the absorption of bacteria and toxins which the healthy bowel resists, thus causing the fever. By clinical observation it is found that a mother who has fever does not furnish healthy milk to her child, and this is also true of women suffering from pronounced albuminuria. There is probably a relation between the nourishment of the mother and the condition of the infant's bowel. The effort to furnish infants with sterilized mother's milk lessened, in the Clinic, the number of cases of hunger fever. Such fever still occurred for which there was no adequate explanation. Fortunately these cases are rarely severe or fatal.

Treatment of Diarrhœa.—Severe diarrhœa is a common complaint at the Front in hot weather, and in many cases disables a man for some days. Paul Lehmann, after trying various drugs, found that by far the best results were obtained by giving ipecacuanha. He gives from 80 c. g. to 1 g. in the day divided into 5 or 6 packets of 0 20 g. each. One of these is taken every two hours in a hot infusion, tea or tilia. For that day milk is forbidden, and the patient takes nothing but liquid (tea, etc.). He takes food the following day, but is not allowed meat. The diarrhœa has always stopped by the second day. The ipecacuanha is very well tolerated, as a rule; it often causes some nausea, but very seldom vomiting. Since using this treatment, he has never had to send a man back to lie up. After standing off duty for a day, he returns the next day and resumes his ordinary food soon afterwards.—(Journ. des Practiciens, July 17, 1915.)

Infant Feeding in Health and Disease

Under the Charge of

ALFRED C. WALLIN, M. D.

Lecturer on Diseases of Children Polyclinic Hospital, Visiting Physician
Metropolitan Hospital, Blackwells Island, Childrens Department
Physician to St. Mary's Hospital, Children
O. P. D. New York

Nuts and Fruits—the Value of in the Feeding of Children.—Dr. George Dow Scott, of New York, presented this paper before the New York State Medical Society (Amer. Jour. Dis. Wom. and Chil.) He stated that among the laity there was a firm conviction that nuts gave rise to indigestion and fruits caused hyperacidity. To some the knowledge that nuts were highly nutritious was new. Nuts, however, contained water, protein, fat, sugar, starch, crude fiber, and ash in large proportions. Each kind of nut had its particular caloric value. Dry nuts were very high in nutritive value and contained more fat than any vegetable substance known. In nutritive value nut butters were far above ordinary cream butter. The writer had given nuts to children as a substitute for meat because of the nutritive value in intestinal fermentation. The proportion of the different food elements varied in the different varieties of nuts. The discomfort of eating nuts was due to faulty mastication and to the erroneous habit of giving them to children after a hearty meal, between meals or late at night, whereas they should form an integral part of a meal. Probably nut protein was not as easily digested as meat protein on account of the water content of 3 to 5 per cent. in nuts against 50 to 70 per cent. in meats. It was therefore fair to assume that the finer nuts were divided, chopped and mashed, the more rapid would be their digestibility. Salt did not make nut food more digestible.

Dr. Scott spoke of the part that nuts played in the dietaries of other peoples and said that mothers in this country should understand the food value of nuts better, giving a variety of nuts to suit the individual child, but it must be understood that they were given as an addition to the diet. Cautiously, after weaning, the child should be given nut butter. Such butters must be more carefully prepared than those for older children. The nut kernels were pounded in a nut mill until of a thick creamy consistency, strained through two layers of clean boiled muslin or a fine wire sieve. Fruit juice or finely cut or mashed fruit should be added. The stools should then be watched for undigested particles or any chemical disarrangement as diarrhœa, duodenitis or enterocolitis. If the butter agreed the quantity could be gradually increased, care being taken to avoid overstocking the child's stomach or digestive capacity. In the constipation of infants nuts form a valuable aid as a lubricant on account of their oils, but they acted as irritants because of the large amount of refuse which they left.

Fruits were given to infants because they were palatable, refreshing, nutritive and because of their salts, their diuretic laxative, tonic and antiscorbutic action. A fruit regime was devoid of toxins and was bad culture media for bacteria. In scurvy, stomatitis and other digestive conditions, the fruit juices were almost a panacea on account of their antiscorbutic qualities. In conclusion, the nutritive qualities of fruits and nuts were not to be depreciated; these foods were not to be given to the child as a pleasurable and luscious appetizer only, but as a food addition to the general diet, stimulating, nourishing and exhilarating it to a stronger mental and physical existence.

A Microscopic Test for Pasteurized Milk.—Frost (Jour. Amer. Med. Assn., 1915, lxiv, 821) started to work upon the theory that it would be possible by means of an intra vitam stain to color live leukocytes. In this way the live cells in raw milk could then be distinguished from the dead cells in heated milk. Frost uses one part of a saturated aqueous solution of methylene blue to five parts of the milk to be tested. The dye should be added to the milk slowly to prevent the possibility of the stain coagulating the milk. The stain is left in contact with the milk for fifteen or twenty minutes, and the sediment of the stained milk is precipitated in a centrifuge and spread on a glass slide. When the smear is dry it is ready for examination. The entire microscopic field is stained a light blue in the case of raw milk. In this blue background appear numerous clear areas, the smaller ones being fat globules, the larger ones leukocytes. On the other hand, the smears made from heated milk do not have the background as deeply stained, and the leukocytes are always more deeply stained than the background. Only the polymorphonuclear leukocytes react in this way, for the mononuclear cells are always well stained.

Breast Feeding: A Plea for Longer Intervals.—By Harold K. Waller in the Journal of Obstetrics and Gynæcology of the British Empire, February, 1915 (issued in July).—The writer remarks on the comparatively small amount of work done in the investigation of breast feeding and the large amount in artificial feeding of infants. His contribution is to emphasize the need for correlation between (1) the periodicity in the secretion of milk, (2) the size of the meals, and (3) the infant's appetite. Dr. Waller is of opinion that in a large proportion of mothers the failure to nurse after the first few weeks is due to a failure to take note of this periodicity in the function of the breast—that is, where the mother and child are normal to start with—and he excludes cases of tuberculosis and other diseases which contra-indicate breast feeding. This periodicity is not always demonstrable in primiparæ till suckling has continued for some weeks, while in multiparæ it is often recognisable earlier. For its establishment all that seems necessary is the regular stimulation of suckling with a sufficient interval between the infant's meals. In cases where the periodicity is firmly established, the engorgement may occur at the appointed time even without the breast being stimulated by suckling. It is accompanied by a sensation which the mother describes as a rushing, tearing, or stabbing, and commonly calls the "draught." The maintenance of the draught throughout lactation is perhaps the best sign that the feeding has been normally carried out. Conversely the absence or rarity of draught after lactation has been carried on for a few weeks should rouse suspicion that the methods are faulty.

Dr. Waller maintains that the custom of urging women to feed their infants every two hours is responsible for weaning in a large number of cases. The reason for the custom is the belief that the infant's stomach is small, but it is not improbable that the water of the milk passes quickly through the pylorus. In the ruminants and carnivora, the breast milk forms a solid clot requiring prolonged gastric digestion, and in them the capacities of stomach and of intestines are as 7 to 3. The non-ruminant herbivora—e.g., horses—as also in man and monkeys, the breast milk forms a flocculent curd; in horses the stomach capacity is to intestinal as 1 to 9, while in man it is as 1 to 4. A baby at 21 days often swallows 7 ounces of breast milk.

Comparative tables are given showing that a child fed every three hours in the first few weeks absorbs more milk than a child fed every two hours. The saving of wear and tear to the mother is enormous; merely to look at the figures allows this to be realized, for a child fed for forty-five days nine times daily received 413 meals, while in the same period one under Dr. Waller's care received only 255 meals, a saving to the mother of 158 meals in less than seven weeks.

One of the tables shows that one child at the twenty-third week took 48 ounces of breast milk in four meals, receiving nothing between 6 p. m. and 6 a. m. next morning.

Surgical Diseases of Childhood.

Under the Charge of

WILLIAM A. EDWARDS, M. D.

Professor of Pediatrics, University of California, Los Angeles, Cal.

Fixation of Fractured Bones in Infants and Young Children.—The following method has been employed by E. H. Bradford and R. Soutter (Bost. Med. and Surg. Jour., 1915, clxxi, 508) in fracture of the upper arm of a young child and in a fractured femur in a two months' old baby.

By means of a long bone drill, with an eye at the point, the broken bone is pierced and strong thirty-day catgut threads passed through the eye of the needle thrust through the skin. On withdrawing the needle the catgut is pulled through the bone. Any needed number of catgut cords can be passed. The skin is protected by a layer of fat-free leather, which will soften when wet and harden rapidly into stiffness. This leather soaked in alcohol is sterilized and placed around the limb and the catgut threads passed through it. Small wood coaptation splints are then placed in desired places pressing on the side of the limb, one to check a forward and backward movement of the fragments and another to prevent sideplay. Traction is then applied to the limb, the coaptation splints are held in position; the catgut threads passed through the fractured bone are tied to the coaptation wood strips, thus firmly lashing the fragments in proper position to a firm splint: over the whole a second layer of alcohol softened leather can be placed, held by a firm bandage and the limb secured in a wire splint. The leather softened in alcohol hardens quickly on the evaporation of the alcohol and in a short time the fractured limb is held in a firm leather splint. In the cases in which the method was used the leather splints and wood splints were removed in four weeks, the catgut having softened and the fracture being firmly healed. It is necessary that the alignment should be kept during the healing of the bone. This is even more important than the exact apposition of the broken ends and is of especial importance where the fracture is near the joints especially the hip and shoulder. Another consideration of importance is the need of securing the limb with little bandaging as possible. Atrophy of tissues and degeneration of muscles are well known to occur from prolonged pressure, also a change in the tissue of the bones in long bandaged limbs, which cannot be conducive to rapid healing. Plaster bandages are to be avoided as much as possible in infants and young children for this reason and also from the fact that frequent inspection of the injured limb is important. Hip-joint fractures proper in very young children may be, in fact, epiphyseal tears or separation of epiphysis and can best be treated by means of an abductor traction splint used in the treatment of hip disease. In shoulder injuries, the humerus should be held abducted at the elbow, strongly flexed. Joint and epiphyseal fractures at the knee require care to prevent backward displacement of the lower fragment if the hamstrings are kept on the stretch. This can be best accomplished by keeping the limb in a slightly flexed position at the knee, after carefully placing the fragments into as suitable position as possible by manipulation, with retention in the position of election by suitable and carefully adjusted and carefully watched pressure. This fracture needs constant inspection. Joint fractures and epiphyseal separations near the wrist and ankle in children need frequent inspection and less prolongd fixation than is necessary in adults.—(A. J. O. Surg.)

Prophylaxis and Orthopedic Management of Anterior Poliomyelitis.—By S. Fosdick Jones, M. D. Colorado Medicine, Vol. XII, No. II, pp. 56-59.

The author summarizes in a brief paper the present status of the prophylaxis and orthopedic treatment of anterior poliomyelitis. He enumerates the different types of the disease and classifies the three stages as:

1. The acute stage beginning with the first symptoms of infection and ending with the entire subsidence of pain and temperature.
2. The subacute stage beginning with the entire absence of temperature and lasting until the establishment of the permanent paralysis.
3. The convalescent stage.

He advises complete and thorough isolation, strict quarantine of from three to sixteen weeks, the use of urotropin in large doses both in patient and persons exposed, the cleansing of the mouth with antiseptic sprays, careful disposal of all excretions and secretions, particularly nasal and oral, the use of individual dishes and thermometers, and the thorough disinfection of patient's house.

Radium and the Rontgen ray are useless. Each of the three stages is a distinct guide for the proper management of these cases.

The treatment of the first or acute stage includes:

1. Absolute rest in bed in a warm but well-ventilated room.
2. The loose bandaging of the affected limbs.
3. Light diet.
4. Large quantities of water by rectum or mouth or both.
5. Free catharsis.
6. Freedom from noise or excitement.

During this stage massage, electricity and stimulating drugs, such as strychnin or digitalis, are strictly contraindicated. The keynote of this first stage is rest.

The treatment of the second stage, marked by the subsidence of the temperature and the establishment of the paralysis, is directed to the prevention of contractions by propr splinting. As long as pain and tenderness persist, indicating the existence of active disease in the motor and sensory areas of the damaged cord, no stimulation of any nature should be resorted to.

In the third or convalescent stage the patient is allowed to be up and about and appropriately treated with (a) massage, (b) muscle training, (c) corrective apparatus, (d) electricity.

The author believes the faradic and galvanic currents are of value and, combined with massage, should be continued over a long period of time.

Jones advises conservatism in operative interference. "For example, not every child with a contracted tendo Achilles needs operation, for suitable apparatus in a great many cases gives far better results. In a general way it may be said that cases should not be operated upon for from two to three years after the acute symptoms have subsided."

Prophylaxis of Joint Conditions in Childhood.—By C. B. Francisco, Southwest Journal of Medicine and Surgery, April, 1915.

A timely paper emphasizing the fact that there is a large field of preventive work in which the orthopedist can work as well as other practitioners. It also points out that most valuable and constructive work in prophylaxis is to be accomplished by the general practitioner in recognizing early that there is a "reason for growing pains," that club-feet and congenital hip cannot be "outgrown."

Hip disease and destructive joint lesions are often insidious in onset and careful and early diagnosis will mean perhaps saving a joint, and the old fogy notion of "waiting" because the limb may have become better is a real danger and results disastrously to the future of the child.

Particular stress is laid on proper examination of children in reference to static conditions, faulty attitudes, prominent abdomens, lordosed backs, hyperextended knees, relaxed ligaments, etc. Ligaments and muscles cannot overcome bony deformities, as they yield to positions of the bony column, and nature may compensate the deformity, but the resultant bone chanegs are productive of difficulties in later life. He cites changes in the spinal column following prolonged faulty attitudes.—(A. J. O. Surg.)

Early Congenital Bone Lues.—According to J. R. Kuth (Arch. Pediat., 1915, xxxii, 244) the bone lesions of late congenital lues and acquired lues are distanctly different from those of fetal and early congenital lues. In the early congenital type the disease affects chiefly the ends of long bones. The characteristic lesion in early congenital lues is an osteochondritis. The diagnosis of early congenital bone lues presents no difficulties. Signs of congenital lues elsewhere, the characteristic swelling of the joints with the pseudoparalysis of Parrot, the Wasserman reaction, which gives a very high percentage of positives in these cases, together with the radiographic examination of all the extremities, are all important. E. Fraenkel says that when all other signs are absent a diagnosis can be made from the radiograph alone. The earliest radiographic changes in osteochondritis are best seen in the fetus or in the child at birth or shortly thereafter (a few weeks). The longer the child lives the less distinct the changes become, until they finally disappear. When present typically, the radiograph shows a heavy, broad, homogeneous, irregularly jagged, band-like shadow at the epiphyseodiaphyseal junction well separated from the diaphysis and jagged toward the epiphysis. Beneath this there is a band, showing increased penetration by the rays, which gives the impression of a break in the continuity in the shaft. Below this, the shaft is seen to continue. Along with these changes at the epiphysis there is to be seen a thickening of the periosteum, or the appearance as if the periosteum were lifted away from the bone cortex. In the more advanced state (gumma and osteomyelitis), the spongiosa in the affected ends of the diaphysis shows a washed appearance, with defects, containing often small irregular denser specks. Partial or total epiphyseolysis may also be seen in the radiograph, the separated edges showing very ragged. These changes are followed by a pronounced atrophy (postluetic atrophy). It is important to have these lesions of so protean a disease as lues in mind, as their recognition is then easy.

Infectious Diseases.

Under the Charge of

ST. GEO. T. GRINNAN, M. D.

Associate Professor Pediatrics, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.

Treatment of Scarlet Fever.—R. Koch (Deutsch. med. Wchnschr. 1915, xli, 372, A. J. D. W. and Chil.) compares the scarlet fever statistics of Barasch with his own and draws conclusions as to specific treatment in this disease. In ten years Barasch reports 1438 cases of scarlet fever with a mortality of 15 per cent., only 6.6 per cent. of deaths occurring after the third day. Koch reports 263 cases in one year with a total of three deaths, or 1.1 per cent. In Barasch's cases no specific treatment was carried to a definite conclusion, the treatment being general. In Koch's cases 28 of the most severe cases were treated by intravenous injection of "convalescent serum," taken from patients convalescent from scarlet fever. Of the 28 cases but 1 died. Of 12 cases, not quite as severe, which were treated with normal human serum, 1 died. Koch remarks the difference in the two mortality records and implies that the small percentage in his cases is due to the employment of the serum. In Barasch's cases 122 out of 217 cases died during the first three days through general intoxication. It is in the very grave cases that the "convalescent serum" has its greatest effect when given early and in sufficiently large doses, 50 c.c. for small children and 100 c.c. for older cases. The serum has little if any effect when used in cases with complications of scarlet fever. The serum should be gathered from a number of convalescent cases and mixed. It is sterilized and combined with 0.5 per cent. of a 4 per cent. carbolic acid solution.

Localizing Brain Symptoms as Early Events in Tuberculosis meningitis.—C. O. Hawthorne (British Jour. Child. Dis., 1915, xii, 232, A. J. D. W. and Child.) reports 2 cases of tuberculous meningitis which began during apparent good health with motor phenomena suggestive of a localized cerebral lesion. One child vomited and the following day was found to have a paralysis of the left face and left arm which cleared up in forty-eight hours, to be followed a day later by convulsive seizures of these parts, following which paralysis was again noted but other clinical signs absent, including the fundus of the eye and the spinal fluid. The paralysis disappeared entirely later on only to usher in the frank signs of a tuberculosis meningitis. The other child was suddenly seized with right sided convulsions which ceased in several hours and next day there were no clinical signs of disease to be found. Within three days convulsive seizures again appeared and he later developed a tuberculosis meningitis which was proven at autopsy. Convulsions and paresis usually come late in this disease and to explain the early symptoms mentioned in the above two cases, the author suggests that the sudden and limited motor phenomena marked the arrival of the specific irritant within the cranial cavity and its application to a localized area of brain tissue. Presumably, the effect of such emboli on the motor cortex would be capable of producing cortical disturbances which express themselves clinically either as unilateral paresis or unilateral convulsion followed after a time by local recovery of nerve function and still later by generalized signs of a meningitis from an extending infection. It does not seem possible to carry the position further than to say that at times the arrival of the infection in this disease may be marked by limited motor phenomena suggestive of a localized cerebral lesion.

Anti-Mumps Inoculation.—Dr. Alfred F. Hess presented (Section on Pediatrics, N. Y. Academy of Med., April 8th, N. Y. Med. Rec.) this communication, in which he stated that it was well known that an attack of mumps conferred immunity on the subject. This had been the general experience and it had been his in the Hebrew Infant Asylum. During the winter of 1912-13 there was an epidemic of mumps in the institution which included one hundred cases. This winter there had been a similar epidemic of eighty cases. None of the children who had the disease in the 1912-13 epidemic had the disease during the past winter. It was evident that since the organism causing mumps had not been isolated they could have no vaccine or serum, but in view of the fact that immunity was acquired by having the disease, it seemed that they might hope to confer immunity by the use of the blood of patients convalescing from the mumps. The Hebrew Infant Asylum furnished a favorable opportunity for trying this experiment since they had the advantage of knowing the past history of the children with a considerable degree of accuracy, and knew just what diseases they had had. Twenty children who had not had mumps before were inoculated with the blood of convalescent children, using six to eight centimeters of the blood from the vein of the elbow of the donor and injecting it intramuscularly. These twenty children were divided into three groups; those of the first were inoculated with the blood of patients who had just recovered and in whom there was still some swelling of the parotid; a second group were inoculated with blood from patients about ten days recovered from the disease, while in the third group blood from children who had had the disease several years ago was used. The injections were made when the epidemic had reached considerable proportions. All the children were then exposed to the mumps in the mumps wards. In all of the wards in which the children were exposed mumps occurred to a considerable extent after these children were exposed, but not one of the inoculated children contracted the disease. In one ward eleven susceptible children contracted the disease, while not one inoculated child did so. The same fact was shown throughout the series. The results seemed to be the same whether the children were inoculated with the blood of those recently convalescent from the disease or those who had had it several years before. Dr. Hess said he felt that the epidemic had been limited as a result of this method of inoculation and was convinced that this method was a simple preventive of mumps in an institution. Of course, in choosing the convalescent donors they should be careful to exclude syphilis. The method was applicable in a family in which one child had the disease and it was desirable to protect the others. As the incubation period of mumps was long, about eighteen days, the injection could be given to other children in the family with every prospect of averting the disease. The length of time during which the immunity lasted had not yet been determined, but it very likely lasted throughout the period of exposure. On the whole, it seemed better to take the blood of recent convalescents rather than that of children who had had the disease several years before.

BOOK REVIEWS

The Health-Care of the Growing Child—By Louis Fischer, M. D. Author of "The Health-Care of the Baby," "Infant Feeding in Health and Disease," "A Text-book on Diseases of Infancy and Childhood," Attending Physician in charge of the Babies' Wards of Sydenham Hospitals; to the Willard Parker and Riverside Hospitals; Former Instructor in Diseases of Children at the New York Post Graduate Medical School and Hospital, etc. Funk & Wagnalls Company, New York and London, Publishers.

This is a companion volume to the Health-Care of the Baby, by Dr. Fischer, and the main object in the preparation of this volume is to instruct and guide the intelligent mother when remote from her physician; the best thing to do in an emergency until medical assistance can be summoned.

The many changes in the methods of feeding, hygiene, gymnastics, development, school life and home-training during the past decade are liable to bewilder and perplex the average mother unless she has a trustworthy guide to rely upon. This little volume will safely guide her in such an emergency. Dr. Fischer lays special stress upon the diet best suited for the growing child. The communicable diseases, their dangers, complications, and modern methods of quarantine are succinctly described from the modern viewpoint. Many illustrations are intersperced in the text showing the value of gymnastics, intended for the development of the spine, chest, neck, arms and legs. Weak ankles and defective walking are graphically illustrated. The most important illustrations clearly show the mother how to recognize measles, chicken pox, and small pox. Pictures of the normal throat and diseased throat are graphically shown, and the meaning of yellow spots on the tonsils are explained. The adenoid condition is clearly depicted and proper instruction given. The meaning of enlarged glands is likewise satisfactorily explained. Many valuable receipts are incorporated in the appendix for the convenience of the mother. The author has endeavored to make his statements plain and easily usderstood while scientifically accurate and in this he has succeeded well. We feel that we cannot recommend a better book to the mother who needs advice on the health and care of the growing child.

A Mechanistic View of War and Peace—By Geo. W. Crile, M.D. Macmillan Company, Publishers, New York. Cloth binding, $1.25.

Early in the present war Dr. Crile was fortunate enough to have an opportunity to take charge of a hospital unit of the American Ambulance in France, and he at once took charge of the situation, which gave him an unusual opportunity to study the influence of the strongest emotional and physical stress of men engaged in warfare. This situation gave Dr. Crile a splendid opportunity to study the clinical behavior of men in injury and disease under anesthesia and the influence of drugs together with experimental study of certain problems bearing upon human relations under great physical stress.

The contents of this book was written in the war zone and later given at a lecture in the Western Reserve University. War as the surgeon sees it, is the theme of Dr. Crile's book. He describes various phenomena that he noted among the wounded and gives a mechanistic explanation, not only of these phenomena, but of war in general. He interprets German Kultur, and indicates ways in which peace may be promoted. One of the most unusual and at the same time valuable features of the work, is its record of cases and experiences that came directly undr Dr. Crile's observation. It is an intensely interesting little volume.

The Popes and Science. The history of the Papal relations to science by James J. Walsh, M.D., Ph.D., Litt.D., Sc.D. Notre Dame), K. C. St. G., Professor of Psysiological Psychology, Cathedral College, New York. Fordham University Press. 110 West 74th Street, N. Y. Price, $2.00 net.

In this revision Dr. Walsh has now added 100 pages of appendixes to the Popes and Science and has made it in nearly every way a complete storehouse of authoritative answers to all the objections raised against the Popes and the Church on the ground of supposed opposition to science. When his book was originally published men could scarcely believe that anyone would insist that far from the policy of the Popes being one of inappeasible opposition to science they were its constant and consistent patrons and benefactors. Dr. Walsh gathered such a mass of facts that as one of the critics said: "anyone who now maintains the thesis of papal opposition to science will find his hands full if he attempts to answer this book." The Evening Post said: "The author has driven his pen hard and deep into the academic superstition about papal opposition to science."

One of the most prominent of English Journals said if Dr. Walsh had only added a series of appendix documents to this volume he would have made a monumental work in the literature of religious controversy and scientific history. Now a hundred pages of appendixes are added. All the Church decrees supposed to prove a policy of Church opposition are quoted in full and the text shows that they have either been misrepresented or misunderstood by those who quoted them as documents in support of Papal or Church opposition to science. A very full account of the Papal Physicians and their writings amply sustains Dr. Walsh's claim that there is no list of scientific men connected together by any bond in history that is so important as this group of physicians to the Popes. No faculty of any university, no matter how old its history compares for scientific achievement constantly maintained, with the list of Papal Physicians.

The educated man who now ventures to talk of Church opposition to science without first having consulted Dr. Walsh's book for the facts is almost sure to find himself in the pitfall which has proved so fatal to the reputation for scholarship of many writers of the past generation, particularly here in America.

The Physicians' Visiting List for 1916. Sixty-sixth year of its publication. Price, $1.25. P. Blakiston's Son & Co. (Successors to Lindsay & Blakiston). 1012 Walnut Street, Philadelphia, Pa.

Fir sixty-six years the enterprising publishing house of P. Blakiston's Son & Co. have issued a physicians' visiting list. None has been more complete than that for 1916, which contains treatment for poisons, the metric system simplified, dose-tablets, periods of infectious diseases, asphyxia of aponea, thermometric scale, etc. This handy pocket visiting list is bound in Russian leather and printed on good paper in clear type. We recommend this old standby to all physicians.

PEDIATRICS

Vol. XXVII DECEMBER, 1915 No. 12

Christmas Season

is here. The Editor of Pediatrics takes this opportunity of extending greetings and hearty wishes for a Happy Christmas and a Prosperous New Year--to all subscribers and advertisers

EDITORIAL

THE CLOSE OF THE TWENTY-SEVENTH VOLUME

With the present issue, the last for 1915, "Pediatrics" completes its twenty-seventh volume, and in doing so, the management takes this occasion to extend its thanks for the general support of its many friends, and looks back with no little degree of satisfaction upon the year that has just passed. The Editor extends to subscribers, readers and advertisers, his most cordial wishes and greetings for a Merry Christmas and a Happy New Year, and may the season of holiday festivities bequeath to all of you a period of pleasure, happiness and prosperity.

We hope our readers are satisfied with what has been placed before them from month to month and that they will continue to assist in the scientific uplift of Pediatrics. We also hope that each of our subscribers will speak a good work for Pediatrics among their medical friends. Pediatrics wishes to stand wholly upon its merits and there can be little question that there are many physicians who would like to subscribe if their attention was once directed to its real value. Such effort would be equally advantageous to all concerned for it is a self-evident fact that the larger the circle upon which such a publication can depend for pecuniary support, as well as for scientific contributions, the more attractive in every way it can be made. In the volume closing with this issue, we have published nearly 700 pages of text matter, being much more than any preceding volume of Pediatrics has contained.

As a closing admonition for your meditation, we present the following paragraph from one of Osler's addresses:

"Banish the future: live only for the hour and its allotted work. Think not of the amount to be accomplished, the difficulties to be overcome, or the end to be obtained, but set earnestly at the little task at your elbow, letting that be sufficient for the day: for surely our plain duty is 'not to see what lies dimly at a distance, but to do what lies clearly at hand.' "

CHOREA OF RHEUMATIC ORIGIN

The view that between chorea and rheumatism there is a somewhat intimate relationship appears to be gaining ground.

There are, for instance, several points of similitude between the manifestations of children suffering from rheumatism and those afflicted with chorea. As Dr. A. M. Gossage of London, England, points out in a paper contributed to the special rheumatism number of American Medicine for July, 1915, it is common to find that children with rheumatism are excessively excitable and emotional, laughing and crying without adequate cause. At the same time they are mentally dull, although in their previous condition of health they may have been bright and intelligent. These cerebral symptoms are exactly like the mental symptoms that are observed in a large proportion of cases of chorea and the condition has been called "minor chorea." Between this condition and one in which marked involuntary movements lead to a definite diagnosis of chorea there are all gradations and, of course, major chorea is a frequent concomitant or sequela of rheumatism. A careful examination of cases of chorea reveals the fact that over 50 per cent have either had rheumatism previous to chorea, or are suffering from rheumatism at the same time or get rheumatism subsequently, provided one regards evidence of present or past cardiac inflammation as conclusive proof of rheumatic infection. Now-a-days chorea is regarded as one of the manifestations of rheumatism and by some is considered as a form of rheumatic infection of the brain. For example, Paynton and Gordon Holmes have described slight changes in the cerebral nerve centers, but in spite of this Gossage thinks it seems more probable that its causation is toxic.

In addition to the irregular involuntary movements and mental manifestations which are distinguishing symptoms of chorea, the condition is often attended by definite muscular weakness which in many cases is so great as to deserve the appellation paralysis. Moreover, these symptoms usually last a long time and do not readily respond to any known treatment. Chorea is more frequent by far in girls than in boys and is perhaps largely a question of heredity. One can obtain in a large number of cases a history of neurotic disorders in other members of the patient's family. The patients themselves have usually been nervous excitable children, who have often exhibited signs of nervous instability. Still is of the opinion that rheumatism itself is more common amongst neurotic children than among normal ones, so that there is often a past history of night terrors, somnambulism, habit spasm and lienteric diarrhea, etc. Dr. Carey Coombs, of Bristol, England, writing in the issue of American Medicine previously referred to believes that the rheumatic nature of the case may be always accepted as a fact in any case of chorea, even when no other manifestation past or present, has been observed, but to those who do not feel able to go so far as this, he would suggest that they, at least, accept the coincidence of carditis or subcutaneous nodes with chorea as evidence of rheumatic infection as valuable as arthritis itself. As regarding chorea then of rheumatic origin, Coombs is of the opinion that in severe chorea the only rational treatment is the salicylates in full doses, with an equal quantity of sodium bicarbonate, every two, three or four hours; aspirin every few hours.

But of all types of cerebral rheumatism the mild relapsing cases of chorea are the despair of the practitioner and patient alike. Coombs bases his treatment of this type of chorea on the conception of the malady as due to injury of neurones by a specific poison which though finite in dosage may be repeated. The indications are therefore (a) prevention of further poisoning, by the use of the most nearly specific remedies available, i.e., salicylates; (b) restoration of the damaged neurones by securing adequate rest for the patient, and suitable restorative measures, such as change of air, tonics, massage, and graduated exercises. The patient should be well fed throughout, and mental rest must be regarded as an absolute necessity both during and for as long as possible after the attack. Coombs thinks that arsenic, antipyrin and so on have not the smallest influence on the course of the disease, and as unpleasant toxic effects may follow their administration they should not be used.

THE DOG AS A CARRIER OF DISEASE

Of the diseases carried by dogs, the foot-and-mouth disease is probably of the greatest interest at this time. In this case the dog acts as a mechanical carrier of infection. The dog which runs across an infected farm easily may carry in the dirt on his feet the virus of this most contagious of animal diseases to other farms and thus spread the disease to the neighboring herds.

There are, however, many other maladies in the spread of which the dog takes an active part. "The Dog as a Carrier of Parasites and Disease" (1), rabies, hydatid, ringworm, favus, double-pored tapeworm, roundworm, and tongueworm are often conveyed to human beings in this way. It occasionally happens also that the dog carries fleas and ticks around transmitting bubonic plague or the deadly spotted fever in this way

Hydatid disease is caused by the presence in the liver, kidneys, brain, lungs, and other organs, of a bladder worm or larval tapeworm. A dog which is allowed to feed on carrion or the raw viscera of slaughtered animals may eat a bladder worm containing numerous tapeworm heads. These tapeworm heads develop into small segmented tapeworms in the intestines of the dog. The tapeworms in turn develop eggs which are passed out in the excrement of the dog, and spread broadcast on grass and in drinking water where animals can eat them and thus become infected. The hog is particularly liable to this disease because of its rooting habits.

Of the external parasites which dogs may carry to animals, fleas and the various kinds of ticks are both troublesome and dangerous. The remedy is clear. The owner must keep his dog clean, not merely for the comfort and happiness of the dog, but to prevent it from becoming a carrier of disagreeable and dangerous vermin.

These reasonable measures, important to the stock farm, have a direct connection with the health of the family. Where ringworm or other skin diseases break out among the children, or the worm parasites develop, it is well to determine whether a dirty or uncared-for dog may not be carrying infection on his skin or his hair, or by conveying disease from carrion directly to the food and persons of his friends.

PEDIATRICS

ORIGINAL ARTICLES

SUCCESSFUL DELIVERY OF TWINS DURING PUERPERAL ECLAMPSIA*

Report of a Case

BY A. R. BIZOT, M.D.
Louisville, Kentucky

The following case seems sufficiently interesting to warrant detailed report. About the middle of September, 1915, I was engaged to take care of Mrs. N., aged 32 years, then in the eighth month of utero-gestation. She had been married two years, and this was her first pregnancy. The usual examination was made including urinalysis which disclosed the presence of a small quantity of albumin in the urine, and the patient was placed upon a rigid diet consisting principally of skimmed milk. I saw her about once every week thereafter, and frequent examinations of the urine showed no increase in the albumin, nor were there any other clinical symptoms worthy of note.

Yesterday afternoon the husband telephoned for me to come to see the patient at once, as she was having considerable abdominal pain. I found her restless and administered 1-8 grain of morphine hypodermically to give her rest. There were then no definite signs of beginning labor. I visited her again early this morning (October 21), and as the bladder had not then emptied itself, I catheterized her taking a sample of the urine to the office for immediate examination. The specific gravity was found to be 1005, there were no casts, but a considerable quantity of albumin was present. The patient's blood pressure a month ago was between 140 and 150 mm. Hg.

This evening the husband again telephoned that the patient was having severe abdominal pain, and I went to see her immediately. Examination showed that labor had commenced, and although dilatation was incomplete, everything seemed to be progressing nicely, the child presenting in the first position L. O. A., when all of a sudden the woman had a severe eclamptic convulsion. I immediately began the administration of chloroform by inhalation and had the husband telephone for another physician to assist me, but as the case was urgent I did not wait for him. Chloroform was continued and after complete anesthesia had been secured high forceps were applied and little difficulty experienced in delivering the child. Of course the maternal parts not having had time to dilate in the usual manner, considerable laceration occurred during the delivery.

---

*Clinical report before the Society of Physicians and Surgeons, of Louisville, Kentucky, October 21, 1915.

After the child had been extracted it was noticed that the uterus did not contract and empty itself as is usual in such cases. Placing one hand upon the abdomen another mass was discovered, and inserting the other hand partially into the uterus I could plainly feel another child. The woman was still completely anesthetized, and the pains had entirely ceased. High forceps were again introduced and adjusted to the child's head; meantime Dr. C. W. Jefferson arrived and continued administration of the anesthetic. The second child, somewhat smaller than the first, was then quickly extracted and the placenta was later removed in the usual manner. Both children appeared normal and cried lustily.

As a final complication there occurred a terrific postpartum hemorrhage. While this was alarming it was probably beneficial rather than detrimental to the patient. I never saw so much blood come from the vagina of a woman in my life, and while the patient's pulse remained rapid, the tension was certainly reduced by the hemorrhage. After the anesthetic was withdrawn hemorrhage was easily controlled. Labor was completed about five o'clock this afternoon. I saw the patient three hours later, her pulse was then 120 to the minute and of fairly good volume, temperature about normal, and she has had no further convulsions. Both the babies are in good condition, and there is no reason why they should not survive. I believe the mother will also recover. As soon as she came from under influence of the anesthetic, the admintration of large doses of Pluto water was commenced.

I have been engaged in the practice of medicine since 1901, and have had over thirty cases of puerperal eclampsia, certainly more than my share.

DISCUSSION:

Dr. B. F. Zimmerman: Dr. Bizot is to be congratulated upon the result in the case reported. I think the post-partum hemorrhage was of decided advantage to the patient. Venesection is recommended in the treatment of puerperal eclampsia. Uterine hemorrhage can usually be easily controlled.

I was recently called in consultation with Dr. Cooper, of St. Helens, Ky., to see a woman soon to be confined. In this case convulsions supervened before labor pains began; in fact the woman never had a single pain, and labor was apparently not quite due as there was no dilatation. The first convulsion occurred early in the morning while she was alone in the house. Her husband returned an hour or so later and finding her very ill immediately summoned Dr. Cooper who sent for me to assist him The woman was given an anesthetic and after artificial dilatation the child promptly extracted by the application of high forceps. The presentation was occipito posterior The child was revived with difficulty, and while Dr. Cooper was working with it the patient, not being completely anesthetized, had another severe convulsion. The administration of chloroform was immediately resumed, and passing my hand into the uterus to remove the placenta I felt another child's head. This was also an occipito posterior presentation, and the child was extracted by high forceps application.

Both children were small and easily delivered regardless of the position; both were revived with difficulty; both had a convulsion shortly afterward; the mother also had one convulsion after completion of the delivery. All three patients are alive and well today.

Dr. Leo Bloch: Ten days ago I was called to the country to see a woman suspected to be approaching the end of uterogestation, labor being expected in about ten days. She was then in convulsions and was immediately brought to the Jewish Hospital, Louisville, in my automobile. Her blood pressure was found to be 220 mm. Hg. She was taken to the operating room and about one and a half pints of blood withdrawn from the arm. When venesection was commenced we started the introduction of normal saline solution in the other arm. The convulsions ceased immediately. The patient was placed in bed and a glycerine-gauze tampon introduced into the cervix. She was delivered the next morning, and just as the head was being extracted she had a slight convulsion.

The urine obtained by catheterization as soon as this patient reached the hospital showed the highest percentage of albumin that I have ever seen, viz., between four and five per cent. She remained in the hospital about two weeks, and when she left there was still two per cent of albumin in her urine. The child lived and there seems no reason why the mother should not make a good recovery.

I believe venesection is beneficial in the majority of cases of puerperal eclampsia, and the importance of saline solution can hardly be over-estimated. It is marvelous what saline solution will accomplish in cases of this kind.

Dr. A. R. Bizot (closing): In the case reported one of the children weighed 6½ pounds and the other 8 pounds, the combined weight being between 14 and 15 pounds. Albumin first appeared in the urine of the mother about a month before labor.

In cases of this kind where there is virtually no attempt at dilatation, where the patient is in a serious condition from convulsions, the advisability of performing Caesarian section must always be considered. The first indication is to empty the uterus, before practicing venesection or anything else.

NOTE—November 2, 1915. The patient referred to in the foregoing report is now well, and both babies are also living and well.

TWO CASES OF INTESTINAL OBSTRUCTION

BY B. F. ZIMMERMAN, M.D.
Louisville, Kentucky.

It is believed that sometimes as much good may result from discussion of our troubles and failures as our successes, and with that idea in mind the details in connection with the following cases are reported. Last Friday afternoon I operated upon two patients for intestinal obstruction, the first being a child aged nine months due to intussusception which had existed for three days, the second an adult.

The child became ill on Tuesday, was markedly restless and vomited once; the bowels had moved well that morning. An enema was given in the evening with no result; the patient continued restless and vomited once or twice the following day. The mother also noticed that a small quantity of blood escaped from the rectum when she attempted to give an enema.

I first saw the child Wednesday morning, and administered a purgative, and also an enema, followed by no result. The patient vomited two or three times Wednesday, was extremely restless, and on Thursday morning an opiate was given to induce quietude. No further vomiting occurred.

Dr. Irvin Abell saw the patient with me Thursday noon, and concurred in the probable diagnosis of intussusception, advising the injection of two ounces of olive oil every hour. This treatment was continued throughout the evening; there was no further vomiting, and about eight o'clock that night the patient seemed better. The oil injections were followed by some abdominal distension, but the passage of no gas nor feces. The child had a pulse of 100 to 120; temperature normal.

The family telephoned me Friday morning that the child seemed much better. I called about eleven o'clock and found that shortly before a small quantity of dark material had been vomited, the first time vomiting had occurred since the preceding Wednesday. I informed the family that instead of being better as they supposed, in my opinion the little patient was very much worse, and I believed a surgical operation at that time would be fatal. It seemed to me certain that in any event the child was going to die, and I did not want to operate upon it; but they insisted that it be given the possible remaining chance. I operated Friday afternoon and found an intussusception of about three inches of the ileum through the ileocecal valve which was reduced after considerable difficulty. The intestine was not gangrenous. Just prior to the operation the child vomited a large quantity of material which had the appearance of feces; it also vomited while on the operating table. The patient lived four hours after the operation, having one fecal evacuation in the meantime.

The second patient, seen Friday morning in consultation with the family physician, was a woman of sixty-seven who had been vomiting persistently for more than a week. The doctor had seen her the day before, and had given enemata of various kinds, including milk and molasses, with no result. Peristalsis was very marked.

On account of the duration of the trouble and the condition of the patient, it was believed the obstruction must be in the large intestine. She was operated upon at five o'clock that afternoon. The incision was made through the left rectus abdominis under the impression that the obstruction was in the left side; a hard mass was detected which was thought might be a contracted colon or impacted feces. The obstruction was found in the small intestine on the right side just below the ileo-cecal valve, and was due to an inflammatory band which had engaged a knuckle of the intestine.

The patient withstood the operation very well; her bowels moved that night and she has had a daily evacuation ever since with the exception of one day. The kidney function was normal, the urine contained no albumen, casts, sugar, pus, blood nor anything to indicate renal disturbance.

The day following the operation the patient seemed drowsy, although she could be aroused, and has remained in about the same condition since, now about a week. She will lapse into an apparently sound sleep and void her urine and feces in that condition. She has absolutely no evidence of pulmonary lesion; a slight bronchial irritation has recently developed; her pulse is 70, temperature subnormal. She has been given calomel and various other purgatives, and elimination has been free by the bowel.

I am at a loss to account for the patient's condition, unless there is some disturbance of the liver, that as a result of the toxic absorption from the intestinal tract there has been such a profound impression upon the hepatic cells that the patient is unable to recuperate. This evening her pulse was 74; she sleeps at least twenty hours out of the twenty-four; her blood pressure is 130 mm. Hg. Several urinary examinations have been made; there has been recently noted a slight trace of albumen; no casts have been found. Elimination by the kidneys has been free at all times. There are no nervous manifestations, excepting that occasionally during the night when awake she becomes restless and slightly delirious; during the day she can be aroused with some difficulty. When awake she talks rationally, and in five minutes will again be asleep. Her respirations are about normal; axillary temperature subnormal, tongue dry and brown. I suspect some change in the liver, with possibly a low grade of acid intoxication. There has been no acetone in the urine.

I am now giving the patient bicarbonate of soda; she takes plenty of water; when aroused she will eat crackers, soft boiled eggs, toast, etc. Slight nausea has been noted recently after eating. During last night she had four or five alvine evacuations without extraneous aid; I gave her calomel and rhubarb followed by a saline this afternoon.

Dr. E. L. Henderson gave the anesthetic, and selected chloroform, of which very little was required; the operation was completed in twenty-five minutes. She recovered promptly from the effect of the anesthetic and the next day lapsed into the stuporous condition described, in which she has remained ever since.

The patient was delirious Wednesday night, three days prior to the operation; she was operated upon Friday afternoon, and has shown some delirium since. Her pulse has never been more than 80 to the minute since the operation; temperature subnormal.

NOTE—The foregoing report was made six weeks ago. The symptoms in the last case gradually improved, and the patient left the hospital practically well three weeks after the operation.

PNEUMONIA COMPLICATING MEASLES*

BY HENRY B. MINTON, M.D.

Brooklyn, N. Y.

Measles has a peculiar affinity for catarrhal processes and the effects of its manifestations in the system are evidenced not only on the skin of the body as its characteristic eruption, but on the mucous surfaces of the body as a catarrhal inflammation. Among the earliest symptoms are catarrhal manifestations in the eyes and the nasal catarrh. Inflammation of the mumous surface is as characteristic of the disease as are the skin eruptions. Complications of the disease are all resultant from these catarrhal processes, which serve as a nidus for the development of a severe grade of inflammation. The more common complications are otitis, laryngitis, pneumonia and gastro-enteritis.

Bronchitis is a regular accompaniment of an attack of measles and it progresses with the development of the skin eruption. The temperature in the uncomplicated case follows a very characteristic type. A sudden rise to about 102, with a sensation of chilliness, marks the onset of measles and it is accompanied by catarrhal symptoms, first noted in the eye, and a dry, short cough. The following day sees a subsidence of the temperature, which usually continues through part of a second day, but may become quite normal during this interval. Such subsidence of temperature is followed by a second rise and, as this rise progresses, the rash makes its appearance, the rash and the temperature reaching their maximum at about the same time, usually on the sixth day from the commencement of the symptoms; then both subside together during the succeeding days.

---

*Long Island Medical Journal.

Any variation of this normal course occurs in both directions, so that mild cases present the minimum of rash, temperature and bronchitis, and severe cases present the maximum. A severe case may present a very sick child at the period of maximum temperature, rash and bronchitis. The presence of complications is associated with a deviation for the usual subsidence of symptoms, with diminishing temperature which marks the normal uncomplicated case after the acme on about the sixth day; or it is associated with a lack of the normal proportion between eruptive symptoms and the temperature as in the so-called suppressed or repressed eruptions with high temperature. An increased evidence of toxemia is also usually present with complications, particularly pneumonia. In the severe or irregular cases, diarrhœa may develop as a result of catarrhal inflammation of the bowel.

Pneumonia is a complication much to be dreaded in the course of this disease in institutional work on account of contagion. Its onset is to be attributed to the extension of the bronchitis through the finer tubes to a capillary bronchitis or, when involving the air vesicles, a bronchial pneumonia. This supervenes in delicate, sickly children, in children whose resistance to infection is poor, in children who have been exposed to cold, hardship or lack of care in the early stages of the disease, and in institutions. The pneumonia may assume the lobar type, which, however, is not usual. Pneumonia complicating measles is usually of the catarrhal, not the croupous type; that is, the exudate, which in both cases contains inflammatory corpuscles and exfoliated pulmonary epithelia, in bronchial pneumonia remains fluid, preserving the character of a catarrhal transudate; in the lobar type it becomes organized by the development of fibrin in much the same way as blood is clotted, or as pleuric fluid becomes solidified upon contact with air after its withdrawal. The bacteriology of pneumonia is much the same in either instance, with the pyogenic bacteria predominating over the specific pneumonococcus in the catarrhal type.

Differentiation between ordinary and bronchial pneumonia by physical signs only is impossible in measles as well as in any other condition. A case with an extensive bronchitis, which presents evidence of being sicker than the bronchitis warrants, may present some areas of fine rales or some areas of increased dullness, but either may be absent or transitory, or indistinguishable from the minuteness of the consolidated areas in a well developed pneumonia. Should atelectatic areas of some size develop from obstruction of bronchioles, a conspicuous dullness may be detected which upon subsequent examination, may have disappeared with the renewed areation of the collapsed portion of the lung.

The best early signs and symptoms of a complicating pneumonia are: First, apathy, mental dullness and prostration toxemia. Second, fever increased beyond the normal measles range. Third, disturbed respiration and pulse ratio, normal being 1 to 4; for example, respiration 20, pulse 80, temp. 99. In oncoming pneumonia the ratio often approximates 1 to 3, as respiration 40, pulse 120, temp. 104. The respiration of a child is best counted when the child is sleeping, as slight causes, such as crying, make the count in the waking child very inaccurate. Fourth, rales, fine and localized, in addition to the coarse rales of general bronchitis. Fifth, diminished respiratory murmur over the affected portion of the lung. Sixth, broncho-vesicular respiration. Seventh, dullness. Eighth, a later symptom is a pause in the respiration, occurring after inspiration in pneumonia, and after expiration otherwise.

The prognosis of the complication is grave, and the frequency and danger of the condition in institutions should warn us that we have here an infectious measles complicated by infectious pneumonia, and that isolation of these cases from other cases of measles is as advisable as the isolation of these cases from other cases of pneumonia. It is more than possible that pneumonia as a complication is very infectious among measles cases and that the fatality in institutional work is due to this susceptibility and that effectual quarantine of the simple cases of measles from those complicated by pneumonia should be rigidly enforced.

The treatment should take into consideration the management of the pre-existing measles. The cases that are judiciously treated in well ventilated, sunny apartments, where they are kept separated, are much less apt to develop complications than are those in dark and damp dwellings, in cold and drafty rooms, or where several cases are kept together.

During the febrile stage, if pulmonary congestion seems impending, veratrum viride is recommended. For pneumonia as a developed complication bryonia, phosphorus, sulphur and tartar emetic are very useful.

Other remedies which may present equal or superior claims to our consideration in certain cases are carbo veg., calc. carb , ipecac., kali carb., kali iodide, kreasote, lycopodium, opium, senga, and spongia. The particular indications for each are well known and the condition in question is one of the many where careful individualization and judicious selection of the remedy which most fully meets the indications, will enable us to save many a desperate situation.

In closing I feel that I should mention the fact that among the organisms present in the bronchial pneumonias complicating measles may be not only the pneumonococcus also known as the diplococcus of pneumonia, but also that other varieties of micro-organisms are quite capable of setting up a pneumonia; among these are the streptococcus pyogens, staphylococcus pyogens, the bacillus pneumoniæ, bacillus influenzæ, bacillus coli and bacillus tuberculosis. The presence of the latter bacillus will explain the failure of some cases to clear up.

DIFFERENTIATION BETWEEN LOBAR PNEUMONIA AND APPENDICITIS IN CHILDREN*

BY STANLEY W. PALLISTER, M.D.
Brooklyn, N. Y.

This subject is of importance to the surgeon because of the present day tendency to immediate operative treatment, as soon as the diagnosis is made, in acute appendicitis.

Right lower lobar pneumonia is the chest condition most commonly confused with appendicitis. Other inflammatory chest conditions, as pleurisy, empyema, broncho-pneumonia, upper lobar pneumonia and pericarditis with effusion have been diagnosed as appendicitis.

Before considering the points to be observed, I will cite a case which is quite in line with most of the cases reported of this mistake in diagnosis.

*Long Island Medical Journal.

Little Miss D., æt. 6, a delicate child with frequently upset digestion, had been ill for forty-two hours when first seen by me. Her expression was anxious. She had complained from the beginning of her illness of pain in the right side of her neck and pain in the right side of her abdomen. There was rigidity of the abdominal wall, particularly on the right side. Her bowels had moved slightly from a cathartic. She had no cough, no disturbance of respiration, nor any symptoms referable to the chest.

A painstaking examination of her chest by her father, who is a physician, and by myself, did not reveal any abnormality. Her temperature was 104 rectal, pulse 140, respiration 26. Diagnosis, based on anxious expression, abdominal pain, rigidity of abdominal muscles (worse over right side), high temperature and rapid pulse, was peritonitis due to appendicitis.

An incision was made through right rectus revealing suffuse peritonitis, worse over omentum and ascending and transverse colon.

The appendix was not involved. It was removed. The operation was done about noon time, forty-eight hours after beginning of illness. The following morning her temperature was 103½, pulse 102, respiration 24. That afternoon temperature 104, respiration 30, and then for the first time there was evidence of lower right pneumonia, as shown by dullness.

The following morning, the fourth day of illness, dullness and crepitant rales over right lower chest. On the sixth day her temperature fell to normal; the wound healed kindly and she made a prompt recovery.

These cases of mistaken diagnosis occur in the first day or two of the disease. They are unusual cases: pneumococcus or other infection of the peritoneum along with infection of the lung, as in the case cited; or reflex pains in the abdomen due to involvement of lower dorsal nerves—simulating peritonitis, and so close is this simulation, diffuse septic peritonitis has been diagnosed even by careful physicians.

The difficulty in differentiating these conditions is the lack of positive physical signs even in typical lobar pneumonia before the second or third day. Atypical cases are even more elusive.

Dr. Kelsey of New York says "There is no doubt that a pneumococcus infection of the lung may exist for days, and run its entire course without the process going on to consolidation "

It is such instances, particularly those with peritoneal involvement, that are puzzling. Granting these cases are not typical of lobar pneumonia, neither are they typical of appendicitis. They lack the sequence of symptoms in appendicitis: Diffuse abdominal pain with vomiting, followed by fever and localized pain at appendix, with rigidity, and later on, formation of mass if the condition goes on to suppuration walled off.

How are we to distinguish early in the disease—before physical signs show in the chest?

The surgeon should bear in mind the possibility of lung inflammation in all cases where he diagnoses appendicitis in children. He should search thoroughly for chest symptoms, as cough; prolonged expiratory act, slight grunt ("huh") with each expiration and especially increased rate of respiration over the pulse and temperature rise.

The respiration too fast for the degree of fever and an increased respiratory rate are markedly suggestive of chest involvement. Diminution or disappearance of chlorides in urine, according to Goodno occurs constantly in pneumonia. A test of the urine might settle the diagnosis. The occurrence of herpes labialis is suggestive of pneumonia.

The greatest factor in these obscure cases is time properly utilized in repeated examinations and further consideration of the case with counsel.

If in doubt, do not operate; wait for signs of consolidation of the lung.

The surgeon who makes this mistake of opening the abdomen in cases of lobar pneumonia feels his position keenly. Yet he is not alone in making mistakes.

According to Dr. Richard C. Cabot's report of "3,000 autopsies viewed from the standpoint of diagnosis: 74 per cent of lobar pneumonias are correctly diagnosed; 33 per cent broncho-pneumonias are correctly diagnosed.

If the surgeon errs in operating on cases of lobar pneumonia in children, he is less culpable than the physician who allows a child to continue under medical treatment when diffuse septic peritonitis from perforating peritonitis exists.

SOCIETY TRANSACTIONS

AMERICAN PEDIATRIC SOCIETY

Twenty-seventh Annual Meeting

Lakewood, N. J., May 24-26, 1915

The Indications for Treatment of Severe Diarrhea in Infancy.—By Drs. John Howland and W. McKim Marriott, Baltimore.

Dr. John Howland, Baltimore, Md.: We have tested the alveolar air in these infants, and find that the carbon dioxide tension in such cases is lower than in health, especially if dyspnea is present. This low tension is an evidence of acidosis, so we examined the cases for other evidences of acidosis. Tolerance for alkalies is used as an evidence of this condition, and children with severe diarrhea have an enormous tolerance for alkalies. Giving alkali in large quantities causes the carbon dioxide tension to rise and the dyspnea to disappear. It is fair to assume that these patients are suffering from an acidosis, brought about by marked loss of alkali through the intestinal tract. This condition is dangerous, and should be treated promptly. Cathartics should not be given unless there is distension of the abdomen accompanied with fever. Opium should be administered in sufficient quantity to prevent more than two or three stools a day, and alkali (preferably sodium) given, together with water, in sufficient quantity and often enough to make the dyspnea disappear and overcome the diarrhea. Life may thus be prolonged. The condition is not a food intoxication, but the absence of a substance necessary to life.

DISCUSSION

Dr. Koplik: I have been very much interested and pleased in listening to this paper; and I should not rise to discuss this point, were it not written by a man whom we all look up to. I have been accustomed to teach that opium is a dangerous drug in these cases. It seems to send the children into a deeper stage of intoxication. It is difficult to gauge its dose in these severe cases of diarrhea in children. Why attempt to stop the so-called peristalsis of the gut, or diarrhea? Diarrhea is a means by which nature wishes to eliminate a certain amount of poisonous substance from the gut. If you reduce it in the gut by the use of opium, you have an absorption of all those noxious substances into the circulation, and are increasing the trouble. Aside from that, I have found, from clinical work, that babies are best treated without any, even the mildest preparation, of this drug.

Dr. Schloss: Dr. Howland's results seem to me absolutely conclusive, and show the point I wish to make. During the last year I had an opportunity to make a few tests of a similar nature, using the carbon dioxide determinations in the blood, in place of the serum, which Dr. Howland has used. My results were absolutely comparable to his. In only a few cases did I have a chance to do the work in patients with severe intoxication and dyspnea, but in these I found that there was a marked lowering of the carbon dioxide in the blood—as low as 18 to 20, from a normal of 28 to 40 per cent. Occasionally there were acteone and diacetic acid in the urine; but this was inconstant.

Dr. Gerstenberger: I should like to ask the dose that Dr. Howland used, by mouth and intravenously.

Dr. Kerley: We have some intestinal intoxication cases that are almost identical with those of Dr. Howland, except in the matter of dyspnœa. The presence of dyspnea constitutes a class by itself, even though the cases may be practically similar in all other respects.

With regard to the use of opium, I believe that it is one of the best drugs we have for use in intestinal diseases; but it must be employed in the right way. I think that you can maintain drainage, and that it ought to be maintained; but it may be so excessive as to exhaust the patient. Then opium should be employed with discrimination and moderation, watching the case carefully. One can thus entirely prevent unnecessary drainage.

Dr Abt: There is one thing that Dr. Howland did not speak of, probably for want of time; and that is the feeding of these babies. I should like to hear his opinion concerning this matter. It is important that this should not be disregarded, for it seems even more important than the giving of alkalies to give something that will prevent them from burning themselves—some food, whether carbohydrate, alcohol, sugar, or whatever is necessary in order to prevent acidosis. I should like to hear Dr. Howland's opinion on this point.

Dr. Blackader: May I say just one word about opium? We can do anything with opium. We can either check peristalsis entirely with a large dose or, with a small dose, only so lessen it as to give an opportunity for the digestive fluids to get into the intestine and exert their action upon the food, thus favoring absorption. With an ordinary dose of a cathartic we all know how the food is hurried on through the intestine, so that the stools contain much undigested material, even in normal children and in small doses. In diarrhea, that condition is much exaggerated; and we have food hurried through the stomach and small bowel, and more or less hurried through the large bowel. It does seem to me, so far as my practice now is concerned, that opium, given in doses sufficient to check this extreme peristalsis, this hasty elimination and loss that is going on, does do the greatest amount of good. Small doses, repeated, I have never seen any disastrous results from. I feel sorry that Dr. Koplik's statement should go out without, at least, some modification.

Dr. Sedgwick: I think Dr. Howland has well said that this acidosis is a condition that may occur; and also that the treatment, in spite of its overcoming some of the symptoms, is not specific. Several years ago, I became acquainted with the fact that in some of these cases of marked acidosis we have a creatin in excretion, which is known to be influenced in a similar way by acidosis to that in which carbohydrates and fats are influenced; and I believe that study along these lines would also be an aid in clearing this matter up. The two lines of study together might give an indication for the foods to be used, as Dr. Abt suggests.

Dr. Morse: It seems to me that this talk of the use of opium or its non-use in diarrhea is a question a good deal like that of the two men who were looking at different sides of the shield. Whether opium is indicated or not, depends, I think, on the circumstances in the individual case. If there is something in the bowel that ought to come out, then we should give a cathartic, and do not need opium. If, on the contrary, everything that has been doing harm is out, and the diarrhea is merely draining the tissues of water and salts, then we do harm with a cathartic, and should give opium. It seems to me that the type of case that Dr. Howland speaks of belongs in the second class; that in which everything doing harm is out, and the diarrhea is merely draining the tissues of water and salts. In that case, opium should be given.

Another point that occurred to me is whether, if there is such a free discharge of liquid and salts from the bowel, there is any absorption from the bowels—whether toxic substances could be absorbed from it, and where. Is this condition not analogous to old-fashioned cholera infantum, with everything coming out, and nothing going in? It seems to me that something else could be drawn as a conclusion from the paper; and that is the advisability, in many cases of diarrhea, of giving alkalies before the appearance of these severe symptoms.

Dr. Talbot: It is important, in studying disease conditions, to know the normal; and recently there has been more or less work with children and infants done in connection with physiological acidosis, a condition in which they show the acodisis from fasting, and other work of that type. It is necessary to know the normal. It is interesting that in studying a large number of new-born infants, we found that the respiratory quotient was very low on the second or third day of life. We have now one hundred new born infants whose cases we are about to report. They showed such a low respiratory quotient as we get in the acidosis of diabetes. Curiously enough, however, we have not found acetone bodies in the urine; and it seems to me that this fact may be substantiated through more improvement on the findings of Dr. Howland, in which he discovered the low carbon dioxide tension in the urine before the acetone appeared in the urine.

Dr. Howland (closing): I dislike to use the term acidosis, because it has been so loosely applied to a number of different diseases in which physiological acidosis is not present. Normally, there are a certain number of abnormal acids in the urine and blood; but there are always bodies of the acetone series that can be demonstrated. The fact that they are present in very small quantity in the urine does not mean that acidosis is present. It is only when the protective mechanism of the body is called into play that we can speak of acidosis. These children showed practically none of the acetone bodies.

Dr Abt spoke of the danger from fasting. This is not from an accumulation of acetone bodies, which the children practically do not accumulate. I thought I had protected myself against Dr. Koplik's criticism. I said "If the infants are distended, with high fever, with the intestines full of fermenting and putrefying substances, opium should not be employed;" but they do not come in that condition, but with retracted abdomens and intestines entirely empty, as they are found. Of course, the diarrhea is, to a certain extent, a conservative process; but it is carried to an extreme in these cases, as many other processes of nature are. It is dangerous to have eight or ten large stools passed each day, containing a large quantity of alkali, the absence of which causes these symptoms. I would not advise giving a sufficient amount of opium to cause the patients to go into coma; but I think that opium is the most satisfactory drug with which to check abnormal peristalsis and abnormal loss of fluid. I give it in small quantities, a few drops after each loose stool; and if there are no more loose stools, no more opium should be given. It is surprising how much these children can take without its influencing their stupor in the slightest degree.

Opium is a two-edged sword, and must be used very carefully; but all drugs that are efficacious are dangerous, if not used carefully. If any effect is to be obtained, the drug must be given to its physiological limit. There is no use in giving one drop of paregoric any more than in giving one drop of the infusion of digitalis. When given for dangerous conditions, the drug must be given in sufficient amount to produce an effect

So far as the dose of alkali is concerned, some children take more, and some less. We usually give four grams of alkali at a time, subcutaneously; and five or six grams, intravenously. When given by mouth, we give three or four grams at a time. But even with the excessive diarrhea, a number of these children, provided that they do not vomit will absorb sufficient to gring about an alkaline urine.

The diet is difficult to advise about. The children cannot be starved, of course, indefinitely. Their appetite is almost always lost; and many vomit with any form of food, even water, that is ingested. I believe that the protein milk is the most advantageous thing to give, rather concentrated, and in small amount. The condition is very serious. The great majority of children that demonstrate this and the other symptoms which show a severe form of the condition, die; but I think that, with intelligent treatment, it is possible to save more of them than can be saved if the indications for treatment are disregarded.

Chorea and Syphilis,—Dr. Henry Koplik, New York City.

Dr. Henry Koplick, New York City: There has lately been an effort to connect chorea with syphilis, the Wassermann test having been applied to such cases, and salvarsan used in their treatment. Naturally, among a large number of cases of chorea, a good many may respond to the Wassermann test; but that fact does not establish a connection between the two diseases. I have made an investigation of this and of the effects of injections of salvarsan, and have found that even after the second and third injections, the chorea continued to run its course. There was nothing in the after effects of the treatment to warrant the assumption that a syphilitic or parasyphilitic influence is a causative factor in the chorea of Sydenham, or that there is any connection between that disease and syphilis. I do not think that we have in salvarsan an agent that can be used to advantage in the treatment of chorea minor.

DISCUSSION

Dr. La Fetra: Dr. Koplik has stated that in blood cultures made on cases of chorea he had found no positive results, but there are recorded in medical literature cases in which the Streptococcus variana has been isolated from the blood of patients suffering from chorea. Four such cases have been demonstrated in the Bellevue Hospital, and a number have been recorded by English observers.

Dr. Saunders: I wish to thank Dr. Koplik for his demonstration, and for liberating our minds from the incubus under which they have been laboring. In this connection, I should like to mention a sign of chorea that I have found valuable for many years. That is this: You know that a child in the first septennium of life, and perhaps in the second, when asked to open its mouth widely, will separate its fingers. That is the normal association of opening the mouth for a young child. In chorea, the children lose that association; and this is the earliest sign of that disease that I can find. There may be a slight flexion of the fingers in chorea, but never the spreading movement. Of course, we do not need many diagnostic signs of chorea; but I have seen one or two cases of tabes in which it was valuable to have the diagnostic sign that I have mentioned. As a prognostic sign, also, it is very valuable. When I find a child's disposition changing, so that it is getting very nervous and fretful, and notice that its movements are somewhat ataxic, I ask it to open its mouth; and if it does not at the same time separate its fingers, I put it to bed. When the child is supposed to be cured of an attack of chorea, I wait until I see that vigorous association movement before considering it beyond the possibility of relapse. I hope that you will all watch for that sign, which I have found so useful.

Dr. Abt: With reference to the arsenic theory of chorea, I wish to say that a good many years ago I adhered exclusively to the arsenic treatment. In the course of my observations on this disease, however, I noticed that some children became ill with neuritis following the use of the arsenic; and I concluded that I had better abandon its use. For many years, now I have relied almost exclusively on the rest treatment; and in those cases in which there is rheumatism, on the use of salicylates. I hesitate to make any dogmatic statement, but I believe arsenic to be of no value in the treatment of chorea.

Dr. Koplik (closing): In the first part of this paper, which I did not care to bring before this society, I mentioned the microorganisms found in the blood in certain cases of chorea. I did not mention the cases referred to by Dr. La-Fetra as having had the Streptococcus varians isolated from the blood, however. We have cultured many cases of chorea within the last two or three years—now probably two thousand cases; and we have been irritated to find that others have been able to discover organisms that we could not. Possibly that may be explained on many grounds; but the fact remains that we have not found anything in the blood. One of my associates in the hospital has even cultured the lumbar-puncture fluid.

We have tried in many ways to find a filterable virus, but have been unsuccessful. We may be able to do so later, when our technique improves.

As to the use of arsenic, I merely mentioned that as one of the favorite remedies. I shall be careful, in the future, how I make statements in regard to not using any drug at all. Arsenic is very useful, I find, as a tonic in the after treatment of chorea; and there is no doubt that some cases that will not yield to salicylate, bromide or rest, the arsenic treatment will benefit I feel rather uncertain, however, about its utility in the way in which it is employed today; and that is the principal reason why I brought forward the facts in this paper. Salvarsan was grasped with such avidity, as a form of arsenic that we can use that I feared it might be of some utility in cases of chorea. I gave it a trial, however, and found that it was of no value.

The Reducing Substance in Spinal Fluid.—By Drs. Oscar M. Schloss and Louis C. Schroeder, New York City.

Dr. Louis C. Schroeder, New York City: The reducing substance in spinal fluid is a fermentable, dextrorotary sugar, probably dextrose. In infants free from meningeal disease, the spinal fluid ranges from 0.05 to 0.134 per cent. Approximately the same figures would obtain in cases of meningismus. The spinal fluid sugar is normal. In epidemic cerebrospinal meningitis, and suppurative forms of meningitis, the sugar is greatly reduced or absent. A large proportion of the cases of tuberculous meningitis show a decrease in the sugar of the spinal fluid. In a number of cases, however, the sugar is normal or diminished but slightly. An increase of sugar alone is of diagnostic importance in this disease. The reducing substance was not found decreased in cases of idiocy, cerebrospinal syphilis or anterior poliomyelitis.

DISCUSSION

Dr. Hand: I used to make quite a number of spinal fluid examinations myself, and became absolutely convinced that the reducing substance is a sugar that Fehling's solution will sometimes fail to give the test for in cases of tuberculous meningitis. In these cases, when tested by the phenylhydrazin method, I got the crystals of phenylglucazone. I felt sure that it was a sugar, but did not carry the work out as scientifically as Dr. Schloss. I found the absence of sugar in suppurative meningitis, and its presence in practically every case of tuberculous meningitis; and I have depended on that, to a certain extent, in the diagnosis. When I found sugar in a case that was evidently one of meningitis, I persisted in examining the sediment for the tubercle bacillus. I was doing it with a technique somewhat defective, but I found the bacilli in something over ninety per cent of the cases. When I try to find the bacillus in these cases now, I find it more difficult, because I have lost my dexterity; but the presence of sugar in a case of meningitis should be a stimulus to making a persistent search for the tubercle bacillus. If such a search is made, it will be found in ninety per cent of the cases.

That picture was striking. I might recall to the minds of the members of the society a note I made a few years ago as to the explanation of the presence of sugar in these cases. It seemed to me that the germs had no influence on the presence or absence of sugar, but that this depended on the presence of polynuclear leukocytes. I made a little investigation and found, using glucose as the sugar, that the polynuclear leukocytes would, within twenty-four hours, reduce the percentage of sugar materially. Those in the empyema fluid reduced sugar also, but to a slight extent. There seemed to be a ferment produced by the polynuclear leukocytes, which caused the disappearance of the sugar in the epidemic and suppurative forms of meningitis, and not in the tuberculous.

Dr. Hoobler: For my own information, I should like to inquire whether Dr. Schloss and Dr. Schroeder were able to arrive at any legitimate prognosis, or any prognosis, from the appearance of sugar in the spinal fluid of cases of the epidemic cerebrospinal meningitis type, that helped them in arriving at conclusions. I take it, also, that five out of the eight examined were negative. These cases, of course, were uninfluenced by the treatment. I suppose that all the rest of the types must have obtained, also, the effect of the inoculated serum used in connection with the treatment. I wonder whether the injection of the serum containing a total of —— per cept of sugar might not have caused the gradually increasing quantity of sugar in the fluid.

Dr. Abt. I should like to ask whether the essayists could explain the change in the permanganate solution which is given by Meyerhofer as due to the presence of the sugar.

Dr. Schloss (closing): With reference to the prognostic value of the presence of sugar in cerebrospinal meningitis, this has been pointed out by Connell, who states without equivocation that the appearance of sugar in the spinal fluid is one of the best indices of improvement. He found it true in all of a large series of seventy-five cases. In our small series, obtained from Dr. LaFetra's service at Bellevue, we found this to be true to a great degree. The patient, before receiving the serum, might show no sugar according to the quantative method; but after the use of the serum, there was a perceptible rise in the sugar. In two or three cases, this rise in sugar was accompanied by marked clinical improvement, before there was any perceptible change in the number of cells and in the amount of globulin—which is in conformity with Connell's results.

With regard to the amount of the reducing substance in the serum, I doubt whether this would have any influence, although we made no experiments to see what influence it might exert. The reason that I take this view is that the serum was given in so small an amount, 10 c.c., and that the subsequent tapping was done eight hours, and often twenty-four hours, after the serum was injected. The normal sugar content of the serum was probably not more than .4 of one per cent and the serum must have been well diluted by spinal fluid. Granting that the latter contained no sugar, adding this amount could not have given the figures we obtained.

In answer to Dr. Abt's question, I would say that I am not familiar with the method that he speaks of at all, and do not feel competent to make a reply.

Acute Cerebellar Ataxia, with report of a case.

Dr. J. P. Crozer Griffith, Philadelphia, Pa.: The important points were the rapid development of symptoms without discoverable cause, the uncommon degree of nystagmus, the disturbance at the sensorium, disturbances of speech and of the reflexes, and the rapid recovery. There was disturbance of the cerebellum, but that was the only part of the brain affected.

Foreign Body Pneumonia.—By Dr. A. Caille, New York.

Dr A. Caille, New York City: Mothers and nurses have the habit of holding safety-pins in the mouth, thus teaching this dangerous practice to their children by suggestion. As a rule, patients are brought in with a foreign-body history and acute symptoms; but in two of the cases here presented, neither the mother nor the family physician suspected the foreign body as the cause of the pneumonia. Had these cases not been transferred to institutional care, with its modern equipment, it is probable that they would have perished with the verdict of death from pneumonia. These cases show the great value of the X-ray as an aid in the diagnostic, and the importance of the bronchoscopic method. All cases of unresolved pneumonia and cases of pneumonia of atypical behaviour should be X-rayed. All foreign-body cases should be publicly reported in the lay press, as a warning to those who have charge of young children to keep things out of their reach and not to put things in the mouth.

DISCUSSION

Dr. Graham: Dr. Caille's paper impresses upon us a most important fact, which has only within the last two or three years been called to my attention, and that is that there is a possibility of foreign bodies gaining access to different portions of the lung, without their presence in the respiratory tract being suspected. I have the records of three cases that would fall under the category of the title of Dr. Calle's paper. In none of them had the presence of the foreign body been suspected. In other words, the child was sent into the hospital for an obscure pulmonary condition, and had it not been for the examination made with the X-ray the condition would not have been thought of. I think that the paper is, if for no other reason, extremely valuable because it calls the attention of the profession at large to this possibility, which certainly, in my experience, has only recently been impressed upon us.

Dr. Miller: In connection with the third case that Dr. Caille reported, I would say that about nine years ago, there was in my wards at the Children's Hospital, Philadelphia, a child of tender age who had a history of a very spasmodic cough lasting several weeks. Before its admission, it had developed fever. On examination we found, at first ,only coarse rales and irregular fever. Later, however, the signs of labor pneumonia developed on the right side, with quite a high temperature, rather fluctuating. The only peculiarity about the case was the spasmodic cough. On the fourth or fifth day of the pneumonia, the child, in one of its coughing attacks, brought up a tack like that seen in one of the pictures shown by Dr. Caille, after which there was a rapid defervescence and recovery. At no time was there purulent expectoration or any evidence of the existence of an abscess or of any mechanical injury to the lung. The case was so much the counterpart of one of those reported by Dr. Caille that I wished to mention it.

Dr. Koplik: I wish to call attention to a physical sign that in some cases is present before the X-ray would be thought of. This is a peculiar snarling sound just over the division of the bronchi. In such a case, the child came in with spasmodic cough and the diagnosis of the possible presence of a foreign body was made. We found a tack that had gained entrance to the trachea.

Another point that I wish to speak of is this: If we do not find a foreign body by means of the X-ray, we should think of the fact, if we have a history of something swallowed, followed by a sudden cough of a spasmodic nature, that the foreign body may be a bean or some other small piece of vegetable substance; because these do not show in the X-ray plate. In one case, the radiographer said that there was nothing in the chest, and we discharged the boy. Six months later, however, he came back. He was then bronchoscoped, and a bean was found in the passage of the bronchus. If we fail, in the case of a child with a history of the sudden onset of spasmodic cough, to find any foreign body by means of the X-ray, we should use the bronchoscope and see whether there is any vegetable substance there.

On page 475, Vol. xxvii, we published a paper, "Recent Work on Diseases of Children," by Hugh Thursfield, London, without proper credit being given the "Practitioner," London, which we do now, with apologies to the editor.

BOOK REVIEWS

Senescence and Rejuvenescence, by Charles Manning Child, of the Department of Zoology, University of Chicago. 500 pages, buckram binding. Price $4.00. University of Chicago Press, Chicago, Ill., Publishers.

After fifteen years of experimental investigation of the nature and origin of the organic individual, the author of this volume has established certain facts which afford a more adequate foundation for the general consideration and interpretation of the age changes in the organic world than we have hitherto possessed. Certain experimental methods which he has worked out has made it possible not only to follow the physiological age changes in some of the lower animals, but to learn something of their nature. The important results of this investigation is the demonstration of the occurrence of rejuvenescence quite independent of sexual reproduction. The bodk differs from most previous studies of senescence in that it attempts to show that in the organic world in general rejuvenescence is just as fundamental and important a process as senescence. The following are some of the questions considered and the author's summing up is quite interesting, entertaining and instructive, viz:

How do young and old organisms differ from each other, and what is the nature of senescence?

Is it a feature of the fundamental process of life or the result of incidental conditions?

Does it occur in all organisms or only in the more complex and highly differentiated forms?

Does it lead sooner or later to death or is there a rejuvenescence of old organisms or parts possible?

About one-half of the book includes the presentation of the author's investigations concerning the problems of individuation and reproduction, therefore, this volume stands out as a record of research as well as an attempt and general survey. The references given are largely intended to serve as guides in obtaining further knowledge of the literature than as an exhausted bibliography.

A careful study of the contents of this volume will, we feel, prove of considerable value even to one who always looks to the practical end of things for anything which helps to give the physician a clearer insight into life's processes must tend to make him a better doctor. The volume contains about 500 pages and the few illustrations are appropriate. The publishers have produced a handsome volume and anyone who is interested in this line of thought will find much here to entertain him and we take pleasure in recommending it.

The Practitioner's Encyclopedia of Medicine and Surgery in All Their Branches.—By J. Keogh Murphy, M.C., (Cantab.), F.R.C.S., Surgeon, Miller General Hospital for South-East London; Senior Assistant Surgeon to Paddington Green Children's Hospital. Pp. 1423; Cloth $7.00, half Morocco, $8.00. London: Henry Frowde, Oxford Univercity Press, 35 West 33rd St., New York City.

The general public today, more than ever before, expects the practitioner of medicine to be a walking encyclopedia of knowledge—omniscient in medicine, he is expected to be familiar with the merits of the various health resorts, the comparative virtues of patent foods, the latest scheme for social development of degenerates, the significance of an operation performed yesterday for the first time by some distinguished specialist. According to the lay mind all these and more are expected in the ordinary compass of his attainment.

When we consider the enormous advances in medicine and allied sciences during the past decade and take into consideration the great and consequent changes in medical practice, it would appear that every pratitioner should have ready access to information which has become indispensable. The vast increase in medical literature makes it impossible for the general practitioner to be thoroughly acquainted with the latest advances on every subject or even to find sufficient time to consult even a small portion of such literature.

A compact practical encyclopedia of medicine in all its aspects has, therefore, beome a necessity. If the Medical man is to keep abreast of the latest advances in medical learning, an encyclopedia of such size and shape that the busy practitioner can within a single volume at once find reliable information, simply and clearly set forth must be provided. The present volume, coming as it does, between the brief medical and surgical summaries on the one hand, and voluminous systems of medicine and surgery on the other, is well conceived, and it is surprising that in the comparatively brief compass of 1,400 pages, such a multitude of subjects have been so satisfactorily covered.

The editors have thought it wise to produce this work in a single compact volume for the convenience of the general practitioner rather than to divide the work into two volumes. However, they have wisely divided the work into two parts; part one is devoted to "Methods of Treatment," and part two to "Agents in Treatment." In part one certain general forms of treatment are dealt with and the treatment for the various disorders are arranged in a systematic order. Minute details of surgical operative measures are excluded and only attention given to the indications for such measures, and the general principles of the treatment of surgical cases and of acute surgical conditions outlined. In part two will be found particulars of the action and use of therapeutic agents which are arranged in classes more as a guide to the general practitioner for the principles and methods of medical treatment.

The editor has very wisely selected as his co-workers for the different sections experts and specialists in their own subjects, who contribute articles, conveying the very latest information in most succinct definite and trustworthy manner. The whole text matter of the encyclopedia is arranged under sections familiar to the practitioner, so that he may with ease, refer to its pages in the cases of medical, surgical and other difficulties, whilst the index provides the fullest possibilities for cross reference. For the physician in the smaller towns and rural districts, this book will prove an especial boon and will in part compensate him for the lack of broadening and stimulating influence of the general and special medical centers and societies, and he can consult this work when ready access to medical libraries and current medical literature is beyond him. This book will serve as an actual working tool in the hands of such a practitioner. This work is a book for the physician's desk rather than to repose on the top shelf of his bookcase, and it will prove invaluable in the hands of any practitioner, who is thrown upon his own resources and who turns to it to keep abreast with the latest land marks in medical progress.

Diseases of Infants and Children.—By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital, and Godfrey Roger Pisek, M.D., Sc.D., Professor of Diseases of Children, University of Vermont, Medical College. Octavo, Vol. 558 pages with 179 cuts and 12 colored plates. Third edition, revised. Handsome cloth binding, $4.50, net. William Wood & Company, New York.

A book on any medical subject written by these versatile and accomplished authors and teachers is sure of a cordial reception at the hands of the medical public. Doctors Chapin and Pisek from their long experience and close contact with students, both graduate and undergraduate, are familiar with the needs of the student and general practitioner, and have produced a text-book presenting a picture or description of diseased conditions as they actually occur at the bed side.

The repeated printings of this work have necessitated the making of new plates which gave the authors an opportunity to thoroughly revise the text, bringing each section into accord with the latest advances which are constantly being made in the specialty of diseases of children. The section on Feeding of Infants and Children has been thoroughly revised, rewritten and recast and new topics added. Albumen-milk feeding and special diet lists for older children are given considerable attention. Infectious Diseases, the Schick test and luetin test are very satisfactorily described. Mental tests especially adapted for the early months of life are included owing to the widespread interest in prophylactic pediatrics. Many of the photographs have been replaced with new ones when such a change was thought to further add to the value of the descriptive matter. By the use of a small type, the rarer and less important diseases have been differentiated, which adds much to this practical book for teaching purposes. In the present revision, this volume embraces a full and complete knowledge of pediatrics, presenting a well balanced presentation of pediatric science and experience. The authors devote sufficient space to etiology and pathology, leading up to a full consideration of the more practical subjects of diagnosis, including differentiation and treatment.

In truth this is a text book for the general practitioner, very explicit in instruction on the doses and uses of drugs, and offers the well informed medical man a repertoire of the science and art of pediatrics. The publishers are to be congratulated on the excellency of the make-up and binding of this valuable and practical volume.

The Nose, Throat and Ear—Their Functions and Diseases.—A Treatise upon the Breath-road, Food-road and accessory Organs, by Ben Clark Gile, M.D., Instructor in Otology in the University of Pennsylvania. Consulting Laryngologist to the Taylor Hospital. With 131 illustrations, 8 of which are printed in colors. Price, $2.75 net. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Publishers..

During recent years the advances in the treatment of diseases of the nose, throat and ear have developed at a rate equalled by a few other specialties. Morbid conditions have been investigated, described and classified; new operations have been devised and new instruments invented. These advances have been accompanied by wide publication of essays, theses and monographs, many of which are beyond the access of those pursuing this specialty as an exclusive vocation. It, therefore, occurred to the author to condense the literature on the subject and compile it in such a manner as to make a practical handy working manual. This the author has accomplished in a very satisfactory manner.

In the preparation of the text for this book, the author gives due attention to anatomical facts which together with other physiological relations underlie the normal conditions of the part of the body with which the subject is closely related. He points out that modifications of these relations and of the accompanying accessory functions are the causative factor in producing diseased conditions of the nose, throat and ear. He finds it impracticable to make a complete classification and the majority of facts are grouped in accordance with his plan leading to a practical, logical succession of ideas so connected that the busy man can readily refer to the text for assistance in difficult conditions which arise in the practice of this specialty. The author has availed himself of the writings of many workers in this special field, both native and foreign. The illustrations are appropriate and of much value in elucidating the text. The publishers have executed the manufacture of the volume in a most creditable manner. Specialists in this particular field as well as the general practitioner will find it a useful and trustworthy consultant, and we take pleasure in recommending it.

Transactions of the Tri-State Medical Association of the Carolinas and Virginia.—Seventeenth Annual Session, held at Charleston, S. C., February 17 and 18, 1915. E. C. Register, M.D., Charlotte, N. C., President. Rolfe E. Hughes, M.D., Laurens, S. C., Secretary-Treasurer. Edited for the Association by Rolfe E. Hughes, M.D. Charlotte, N. C., Observer Printing House, Inc., 1915.

This is an imposing volume of nearly 500 pages with heavy buckram bindings and reflects credit on the Association as well as on the fidelity of the Publication Committee, who had the matter in charge. This volume contains 72 papers read by authors and by chairmen of the various sections together with other discussions. The papers on the whole are succinct, scholarly and erudite and well abreast and down to date with the latest discoveries in medicine, surgery and the various specialties.

The address of the President, discussing "The Advantages of Medical Associations," is the greatest presidential address ever delivered before any medical society in the South. It is a charming masterpiece of English literature. It is by far the greatest production from the pen of Dr. Edward C. Register, long editor of the Charlotte Medical Journal, and recently elected to the presidency of the American Medical Journal Editors' Association.

Dr. Register points out the many advantages of medical associations and urges upon the profession the necessity for becoming better organized which will make them better physicians by open and free discussions of difficult cases, as men are never so likely to settle a question rightly until they discuss it freely.

Dr. Register points out the value of discussion when he says: "If a hundred men, from different parts of the world, examine, criticise, and fully discuss the question from every angle, point of view, and personal experience, the truth is very apt to be established, either for or against the theory. All errors arising from mere personal and local antagonism and local environment will be eliminated, and the result may be confidently relied upon."

The reviewer being a native Tar-Heel and knowing personally the major part of the membership of this Association, expects during the coming winter to have a whole evening in an easy chair before an open fire and enjoy a prolonged examination of this volume.

Bodily Changes in Pain, Hunger, Fear and Rage.—By Walter B. Cannon, George Higgison, Professor of Physiology in Harvard University. 300 pages. Cloth binding. $2.00, net. D. Appleton and Company, New York and London, 1915.

This work might well be considered a companion volume to the "Mechanical Factors of Digestion," published in 1911. Heretofore the question of the effects of the emotions of digestion has received but little attention at the hands of physiologists and it remained for Cannon and his co-workers to give us the benefit of their research conducted during the past four years at the Harvard Physiological Laboratory which are fully described in this work.

Pain and the powerful emotions of fear and rage have been found to be accompanied by the stoppage of digestion, the setting free of sugar in the body, the abolition of fatigue, the faster clotting of blood and by other fundamental changes, all favorable to great feats of strength and endurance and to self-preservation in fierce struggle. The author discusses the relation of these emotional changes to the fighting instincts. After showing the inadequacy of modern warfare as a means of giving natural outlet to the activities for which the emotions prepare, he suggests alternative satisfactions.

The results of Cannon's extensive research into this subject were so satisfactory to himself and co-workers that it has seemed to him worth while to gather together in convenient form the original accounts of these various experiments and to arrange the results and discussions in an orderly and consecutive manner, so as to place the subject in a more readable form for those not trained in the medical sciences. The subject matter is of peculiar importance to the physician who is interested in a more thorough understanding of the effects of the emotions on the bodily functions. It is a volume worthy of careful study and it gives us pleasure to commend it to our readers.

How to Live.—Rules for Healthful Living, Based on Modern Science. Authorized by and prepared in collaboration with the Hygiene Reference Board of the Life Extension Institute, Inc., by Irving Fisher, Chairman, Professor of Political Evonomy, Yale University, and Eugene Lyman Fisk, M.D., Director of Hygiene of the Institute. Cloth, 324 pages. Price $1.00, net. Funk & Wagnalls Company, New York and London, 1915, Publishers.

The proper care of individual and family health is the most patriotic duty of a citizen. Public health is the foundation on which repose the happiness of the people and the power of a country, and the care of the public health is the first duty of a statesman.

The purpose of this book is to spread knowledge of individual Hygiene and thus to promote the aims of the Life Extension Institute. These may be summarized briefly as: (1) to provide the individual and the physician with the latest and best conclusions on individual hygiene; (2) to ascertain the exact and special needs of the individual through periodic health examinations; (3) to induce all persons who are found to be in need of medical attention to visit their physicians. It is to be regretted that the common idea of most people "to keep well" means to keep out of bed, and with them the subject of personal hygiene is given but meagre consideration.

The purpose of this manual is to point out, first, the preservation of health; second, the improvement in the physical condition of the individual; and third, to the increase of his vitality. In short, the objects of the manual are positive rather than negative. It aims to include every practical procedure that, according to the present state of our knowledge, an athlete needs in order to make himself superbly "fit," or that a mental worker needs in order to keep his wits sharpened to a razor-edge.

What to Eat and Why.—By G. Carroll Smith, M.D., Boston, Mass. Second edition, thoroughly revised. Octavo of 377 pages. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $2.50 net.

The first edition of this work was so cordially received by the profession that it has stimulated the author to bring out a new edition which is now before us, and in the revision an entirely new chapter on exercise has been added, not only because of its importance in causing disease and inviting a possible recurrence of same, but also because of the important role it plays in the restoration and maintenance of health. This is possibly one of the most important chapters in the book and we have examined it with unusual interest. A new chapter on rheumatism has been introduced because the advances in the last three years have added greatly to our knowledge in this subject. Many of the affections in the alimentary canal have been rewritten and greatly enlarged and many other chapters have been augmented and brought down to date. Some tables and typographical errors of the first edition have been corrected. Dr. Smith is thoroughly familiar with this subject and has given the profession in a book of unusual value and we have pleasure in recommending it.

The Practitioner's Visiting List For 1916.—Four styles; weekly, monthly, perpetual, sixty-patient. Pocket size; substantially bound in leather with flap, pocket, etc., $1.25, net. Lea & Lebiger, Publishers, Philadelphia and New York.

It affords a simple and complete system for keeping the records of daily practice. In addition it contains ruled pages for daily calls and their notes. general memoranda, addresses, cash account, etc.

It is issued in four styles to meet the requirements of every practitioner: "Weekly," dated for 30 patients; "Monthly," undated for 120 patients per month; "Perpetual," undated, for 30 patients weekly per year, and "60 Patients," undated, for 60 patients weekly per year.

The text portion of "The Practitioner's Visiting List," for 1916 contains, among other valuable information, a scheme of dentition; tables of weights and measures and comparative scales; instructions for examining the urine; diagnostic table of eruptive fevers; incompatibles, poisons and antidotes. The record portion contains ruled blanks of various kinds, adapted for noting all details of practice and professional business.

Backward Children.—By Arthur Holmes, Dean of the General Faculty of the Pennsylvania State College and Author of "The Conservation of the Child." Childhood and Youth series, edited by M. V. O'Shea, Professor of Education, the University of Wisconsin, 250 pages, cloth bindings, $1.00,net. The Bobbs-Merrill Company, Indianapolis, Publishers.

Arthur Holmes, Dean of the Pennsylvania State College, has studied backward children in the clinic and laboratory as well as in the home and school, and is recognized as a first authority in America on arrested development.

Out of a fund of scientific knowledge he has written his book in simple, sympathetic and popular style to help those who are striving to help slow boys and girls and reclaim the mentally arrested. He tells the parent and the teacher what they need to know in language they can understand.

When is a child backward? What are the varieties of backwardness? May a child be backward in some ways and forward in others? Are children backward by birth, or by neglect or faults of training? How is backwardness detected? How can one tell whether it is permanent or temporary? What are the physical causes? What are the effects of food and stimulants? What are the remedies? These, and similar questions, Dean Holmes answers by the concrete discussion of actual cases.

This book is written in a simple, graceful style without affectation or pretense. It is particularly free from technical or professional terminology so that the layman can read it with ease, pleasure and profit. It is a book that we can commend to the physician.

What is Back of the War.—By Albert J. Beveridge. 420 pages, cloth, $2.00, net. Bobbs-Merrill Company, Indianapolis, New York, Publishers.

The text matter of this book is made up from articles that recently appeared in condensed form in Collier's Weekly, the American Review of Reviews and the Saturday Evening Post. Senator Beveridge gives to his readers information received first-handed of the great war that is engaging the nations of Europe.

He went into the trenches and among batteries in action. He saw battles. He visited hospitals, prison camps, and captured territories. And he tells what he saw there.

To get at the thought behind the war in Germany, in France, and in England, however, was his chief object. So he interviewed men and women in many walks of life—administrators, authors, philosophers, socialists, capitalists, laborers, peasants—and set down their views with care. The conversations with representative men of these countries occupy several chapters and are likely to attain permanent historic signifiance.

What is Back of the War presents to Americans a new aspect of the war; and provides them also with authentic data on which to base judgment of motives, and morale, and from which to estimate present resources, and forecast the outcome.